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ANALYSIS OF INDUSTRIAL SECURITIES

By

CARL KRAFT

With the Federal Aviation Corporation; formerly in charge of Investigation, Buying Department, Hambleton and Company

And

LOUIS P. STARKWEATHER, M.B.A.

Department of Banking and Finance, New York University; formerly with the Industrial Department, Bankers Trust Company

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PREFACE

Intrinsic values in securities can be determined only as the result of a Complete Analysis of the industrial enterprise. Such an analysis is generally made by the responsible investment banker, and every effort is made through proper analytical methods to offer to the investor a sound and attractive security.

The authors in this volume develop a technique of analytical procedure for the determination of the value of industrial enterprises, which they have found satisfactory in the investment banking business. The fundamental basis of industrial analysis is the financial statement analysis, which, however, must be coupled with a consideration of many other factors influencing the successful operation and development of an industrial business. The lack of uniformity in accounting procedure and regulation, and the irregularity of economic activity as compared to public utilities and railroads, makes the problem of analyzing the financial statements of industrials more difficult. The purpose, therefore, in this volume has been to present in a comprehensive way the more important of the various complex factors entering into the Complete Analysis of the industrial unit.

An industrial situation can be analyzed for various purposes and under varying conditions. There are limitations of time, money, and data which frequently make a complete examination impossible. For this reason the authors suggest and explain different types of analyses, and have sought to indicate through the medium of actual cases the application of these different types. Naturally, the more complete the analysis, the more reliable will be the result. However, there is little excuse for the investment banker, the capitalist, or even the individual investor making a hasty and substantial commitment without a sound analytical approach. The investment banker's responsibility to his clientele does not end with the underwriting and distribution of securities

offered, but there rests upon his shoulders a strong moral obligation to exercise a supervising and protective function over those offerings for which he is responsible.

Analysis of industrial corporations for the purposes of short-term credit, such as is undertaken by commercial bankers, involves the same sort of analysis as is made for any other purpose. The commercial banker is just as interested in protecting a short-term loan of a million dollars as is the investment banker in protecting a twenty-year bond issue for a similar amount. Analysis made preliminary to the grant of a commercial loan of any size must represent considerably more than a determination of the current position and the liquidity of accounts receivable and inventory.

No book, however complete, can develop an industrial analyst. The present volume is not designed as a short-cut to reach this goal. The technique of industrial analysis is involved and complicated, and can be acquired only after years of intensive effort. However, instead of having to absorb volumes of material on accounting, industrial property values, corporation finance, marketing and management, and allied subjects, the authors have attempted to bring into one volume the more important factors in each of these various branches which would ordinarily enter into the analysis of the affairs of an industrial corporation.

In order to illustrate convincingly the problems involved and the methods used in their solution, the authors have included a number of illustrations taken from the larger and better known companies. In some the identity of the companies has been disguised because the figures disclosed are not ordinarily published. These analyses were made during 1928 and the early part of 1929, and the lapse of time will enable the reader to make a check of the conclusions reached. Although the corporate conditions may have changed since these analyses were made, the methods involved are the same, and there is the additional advantage of comparing the company's performance and present condition since the 1927 and 1928 financial statements and conditions were analyzed.

In the preparation of a book of this type, much data must be accumulated and prepared, so that the authors have naturally made frequent use of such standard services as Moody's, Standard Statistics, and others. There have been frequent demands made upon the various trade associations, the New York Stock Exchange Listing Committee, and similar organizations. The authors appreciate the cooperation that has been extended to them by all these agencies. They are particularly indebted to Mr. John Stevenson, Statistician, Kidder, Peabody & Co., and Lecturer at the New York Stock Exchange Institute; Mr. William F. Lecraw, Statistician, Kountze Brothers; and Dr. Jules I. Bogen, Financial Editor of the *Journal of Commerce*, and Associate Professor of Finance of New York University, for their assistance in the preparation of manuscript and their constructive and helpful criticism of material.

The authors wish to express further their appreciation of the cooperation rendered by a number of business and banking officials and more especially to Mr. Henry J. Cochran, President of the Bankers Trust Company, and the late Colonel John A. Hambleton of Hambleton & Company.

Carl Kraft
Louis P. Starkweather

New York,
February 5, 1930.

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ANALYSIS OF
INDUSTRIAL SECURITIES

CHAPTER I

THE NATURE AND IMPORTANCE OF INDUSTRIAL ANALYSIS

Scope of Industrial Analysis.—Intrinsic security values in industrial enterprises cannot be determined by merely reviewing situations in a cursory manner. In order to determine whether or not an industrial enterprise is substantial, it is necessary to subject all the component parts of the assembled business unit to an exhaustive and detailed analysis. Industrial enterprises do not differ materially within themselves, and accordingly the technique of analyzing the operations of a coal mine or an automobile concern involves essentially the same principles and procedure. Consequently, a general method of analysis can be applied to almost all industrial security problems even though the application of the method may vary slightly in individual cases.

Undoubtedly, the chief limitation to the development of a satisfactory analysis of an industrial security is the lack of complete and adequate data. This may be attributed largely to the frequent refusal on the part of industrial corporation officials to release adequate information in view of their private form of ownership and control.

The New York Stock Exchange has done much to encourage, by its listing requirements, the publication of more complete data with respect to earnings, asset values, and managerial responsibility. The listing circular of the New York Stock Exchange is a practical model of statistical information concerning the affairs of a corporation. The trend of corporate opinion respecting the publicity of its affairs has changed materially in recent years under the leadership of such companies as the United States Steel Corporation, General Motors, and American Rolling Mill.

Due to the wide variety of economic pursuits engaged in by

the enterprising industrialist, it is impossible to expect any very great uniformity of methods either in the field of business operations or in financial policies. Much progress has been made in the standardization of the manufacturing and distribution of products, and in accounting methods. However, much remains to be accomplished, as will be seen from the treatment of financial statements and reports in the following pages. Because of this lack of uniformity of data, the determination of industrial security values is made increasingly difficult.

Growing Importance of Industrial Analysis.—Perhaps the best indication of the increasing popularity of industrial securities will be found in the tremendous increase in the last twenty years of the number of issues listed for trading on the New York Stock Exchange. Total listings of issues on January 1, 1909 amounted to 1,386, whereas on January 1, 1929 they had grown to 2,711, or an increase of nearly 100%. The total market value on January 1, 1929 of all bonds and stocks listed reached the amazing amount of $114,851,081,802.[1] (This total, of course, does not begin to approximate the large number of securities traded in throughout the country, on other stock exchanges and in unlisted markets.) On January 1, 1929, the industrial issues aggregated 1,067 or 47% of the total for domestic or United States companies, while in 1909 the percentage was approximately 16%.

Still further evidence of the growing importance of and necessity for industrial analysis will be found in the rapidly increasing amount of industrial financing during recent years. Greater importance is being attached by the investor to equity securities with the result that the past two years have become identified with substantial amounts of convertible bond issues, bonds with stock purchase warrants attached, convertible and participating preferred stocks, as well as common stocks. The extensive issuance of rights to common stockholders during 1928 and 1929 is like-

[1] New York Stock Exchange, Report of the President, May 1, 1929.

(000 omitted)

Class of Issue	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919
I. Long-Term Bonds and Notes										
(a) Railroad	$ 298,998	$ 395,057	$ 297,146	$ 339,563	$ 667,404	$ 427,957	$ 464,488	$ 336,671	$ 302,380	$ 99,771
(b) Public Utility	949,933	1,210,503	1,047,216	857,787	722,018	588,821	431,081	349,975	199,998	117,046
(c) Industrial and Miscellaneous	1,534,995	2,006,578	1,549,537	1,394,851	767,629	883,265	751,013	703,757	615,013	306,696
Total	2,783,926	3,612,138	2,893,899	2,592,201	2,157,051	1,900,043	1,646,582	1,390,403	1,117,391	523,513
II. Short-Term Bonds and Notes										
(a) Railroad	12,500	19,500	8,000	24,500	56,250	9,238	32,352	15,995	20,000	17,400
(b) Public Utility	114,082	82,428	92,283	117,540	107,032	48,712	19,445	24,872	127,026	126,487
(c) Industrial and Miscellaneous	93,163	167,260	182,136	155,067	172,141	85,321	63,849	122,202	410,410	180,466
Total	219,745	269,188	282,419	297,107	335,423	143,271	115,646	163,069	557,436	324,353
III. Stocks										
(a) Railroad	52,598	91,108	40,845	16,218	55,963	27,322	26,968	—	—	—
(b) Public Utility	818,703	783,607	464,886	520,771	496,551	250,457	275,715	117,088	55,315	35,350
(c) Industrial and Miscellaneous	2,139,793	620,056	674,954	674,428	277,308	381,403	270,823	152,444	979,870	1,420,158
Total	3,011,094	1,494,771	1,180,685	1,211,417	829,822	659,182	573,506	269,532	1,035,185	1,455,463
Grand Total	6,014,765	5,376,097	4,357,003	4,100,725	3,322,296	2,702,496	2,335,734	1,823,004	2,710,012	2,303,329

Figure 1. New Corporate Issues in the United States (Exclusive of Refunding Flotations) for the Years 1919–1928

Commercial and Financial Chronicle, Vol. 128, January 19, 1929, pp. 316, 317.

wise further evidence of the desire of investors to participate in the final profits of the business. Industrials offering, as a general rule, greater opportunity for speculative profit, have increased in popularity, as is evidenced from the figures on new financing in the table shown in Figure 1.

An inspection of the table reveals that the volume of industrial long-term bonds increased from $306,696,000 in 1919 to $1,534,995,000 in 1928, a gain of $1,228,299,000. In the same interval the combined increase for railroads and public utilities amounted to only $1,032,114,000.

The public interest in stocks far outweighs that shown in short-term bonds and notes. Industrial stocks increased from $1,420,158,000 in 1919 to $2,139,793,000 in 1928, or a total of $719,635,000. Railroad stock financing shows an increase of $52,598,000 and public utilities $783,398,000. While railroads in recent years have resorted to stock financing, it is evident that public utility stocks are the only class of securities that has enjoyed an expansion comparable with industrials.

Probably a more significant interpretation is obtained by taking the total financing of all types for each class of business. In the interval from 1919 to 1928 inclusive total railroad financing increased $246,925,000 and public utility $1,603,880,000, making a total increase for these two classes of $1,850,805,000. During this same period industrial financing increased $1,860,631,000, which is actually in excess of the combined increase for railroads and public utilities.

Post-War Need for Industrial Analysis.—An important step in the development of industrial analysis will be found in the economic and financial conditions arising out of the post-war deflation of 1920-1921. Rapid strides were made at that time in an appreciation of the need for a thorough analytical point of view in the investment and commercial banking fields as well as in development of methods of analysis. The professional industrial engineer and his firm became important factors in the

financial field, and many accounting firms turned their attention to the possibilities of going further than the customary audit, and of broadening their scope of operations to include the undertaking of comprehensive industrial surveys and analyses.

Commercial bankers proceeded to develop certain officers and even departments whose particular function was to apply a sound analytical technique to good loans, as well as to those which had become frozen and where rehabilitation had to be undertaken for the financially embarrassed companies. An interesting account of this development is evident in the following summary of an address before a group of southern bankers:

The question uppermost in our minds at this moment, I feel sure, is—"How shall we prevent a recurrence of industrial maladies similar to those we have been attempting to cure during the past three years?" My answer would be—by an intelligent and intensive study of our commercial accounts and the industries as a whole, of which they are part, and particularly by learning how the manufacturing business must be conducted in this competitive age so as to produce a profit.

When the orgy of plant expansion, over-purchasing of materials, over-production of products, over-stocking of jobbers and dealers, over-borrowing of money from banks, incident to the tremendous impetus in business after the Armistice, culminated, bankers became painfully aware of the fact that they also had been deceived by the enthusiasm of the times, and they admitted, at least confidentially, that in many instances they had loaned as confidently and as unwisely as manufacturers had borrowed. Spurred by the humiliation of their own mistake, they took vigorous measures immediately to hold American industry together until it could be righted. Without conferring together they came to practically a unanimous decision to save every industry in trouble which on the facts in the case evidenced the right to survive. They lost no time in getting the facts together, analyzed these facts, and then offered their advice and assistance. New managements in many cases had to be selected and installed.

This was done without hesitation in extreme cases, more slowly in others, for the bankers in interest realized fully their own limitations. They did not seek to exercise control over operations of any distressed business, if this course could possibly be avoided.[2]

Types of Industrial Analysis.—Industrial analysis, as developed in this volume, may be divided into three major divisions. These are known as the Preliminary, Complete, and Limited Analyses, all of which have as their foundation a thorough and detailed examination of the available financial statements and reports. However, it is not always possible, due to the limitations of time, expense, and availability of data, to make a Complete Analysis and, therefore, the result has been the development of the Preliminary and Limited Analyses, the technique and illustrations of which are also developed in this volume.

Briefly, it may be stated at this point that the Preliminary Analysis is essentially a financial statement analysis which is made to determine the general characteristics of a given industrial situation and its securities. The Complete Analysis is used extensively by investment bankers, reorganization committees, capitalists, large investors, and commercial bankers, to cover completely every possible detail in making an intensive and far-reaching industrial survey. Such a study includes a complete field study involving the examination of plants and properties, operations, personnel, appraisals, patent and legal investigation, as well as the usual statement analysis.

The Limited Analysis is a modification of the Complete Analysis and is designed to meet the requirements of those who are unable, for want of time or money, to make the complete field study. Such an analysis is particularly suitable to the investor and security analyst, in determining within a reasonable degree of accuracy the value of an industrial enterprise.

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[2] Summarized from "The Banker's Relation to Industrial Reconstruction Since 1920," delivered before the Convention of Reserve City Bankers at Dallas, Texas, April 16, 1924, by Fred W. Shibly, Vice President of the Bankers Trust Company of New York.

Industrial Analysis and the Investment Banker.—Inasmuch as most of the generally known and marketable industrial securities originate with the investment banker, it is important to indicate his relation to the question of industrial analysis.

The business of the investment banker involves credit ranging from about one year to perpetuity. The investment banking business is essentially a long-term credit operation, whether it be the underwriting of a new issue of securities, the complete "sell-out" of a business, or a reorganization. Fundamentally, the investment banker is concerned, through his buying department, with the purchase of security issues that will be sufficiently substantial to sell with complete safety to his clients and at the same time yield a profit to him, the dealers with whom he trades, and his salesmen. In order to do this, it is extremely important that industrial enterprises be viewed in the light of a Complete Analysis. The fact that a company has earned a substantial profit for a period of years is not necessarily an indication that it will be able to do so in the future. In order to substantiate this, it is only necessary to review numerous companies involved in public financing which were at one time successful but which are now or have been in the hands of receivers.

In financing bond issues, the banker works with one thought in mind, and that is—if a company has made a certain profit for a period of years, will it be able to maintain this same earning power for the life of the bond issue? In other words, will the historical performance of the company be continued into the future? This does not imply that the banker becomes clairvoyant; rather, it is meant to convey the thought that the Complete Analysis should reveal any substantial fallacy in the picture. However, in the financing of stock issues, the banker must determine the company's capacity for increasing its profits in the future in order to enhance the value of the stock under consideration.

When the investment banker buys a "deal" and disposes of it on a wholesale basis through dealers, who in turn retail it, his

obligation is by no means at an end. The reputable banking fraternity carries a high moral obligation toward any securities they have underwritten just as long as those securities remain outstanding. This carries the banker to the second application of industrial analysis.

Once an issue of securities has been sold, the investment banker makes it his business to follow carefully the operations of the company, quite aside from the market quotations on the securities that have been sold. In many cases the investment banking firm appoints to the directorate a partner or officer from its own organization, whose business it is to keep informed on the operations of the company. In order to do this, the bankers maintain files called "liaison" or "follow-up" files, in which the monthly or quarterly operations of the company are checked from an analysis of the balance sheets and the profit and loss statements. When such a statement analysis reveals unfavorable trends, it is necessary to analyze the situation in greater detail. Such a protective function proves rather expensive to the investment banker, but it is necessarily a part of his obligation. In addition, it is an important factor in his efforts to maintain his prestige and financial position in the investment banking field.

It is almost impossible for an investment banking firm to do industrial financing in any volume without having some of its companies get into financial difficulties. This brings out the third application of industrial analysis to the investment banking business in the form of reorganization, receivership, and the like.

The investment banking business is a highly personal business. Financial deals are originated largely on a personal basis and securities are sold almost exclusively on this basis. This in turn means that it is difficult to obtain clients and extremely difficult to retain them unless they are properly serviced. Such service work is usually delegated to the statistical department of an investment banking house. It involves the application of the principles of industrial analysis.

Industrial Analysis and the Large Investor.—In the application of industrial analysis to the investor, a sharp distinction should be drawn between the institutional investor, the large-scale capitalist, and the large individual investor.

In the first class we have the large institutional investors as represented by insurance companies, trust companies, philanthropic trusts and foundations, and large estates. There are frequently thrust upon this group serious problems of the management or liquidation of industrial enterprises. As a result, an adequate method of industrial analysis becomes a matter of importance. As in the case of the investment or commercial banker, recourse is frequently taken to the professional industrial engineering firm for an adequate analysis of the problem.

The second large class of investors is represented by the capitalist or a group of them associated in a syndicate, who actively manage their own resources with a view to participating directly in the promotion and control of an industrial enterprise. The capitalist is interested primarily in the potential possibilities of a particular type of enterprise, the appreciation of principal, and a relatively high return on capital for risk assumed. Such investors usually require a Complete Analysis. A preliminary check is made whenever a proposition is submitted, and as in the field of investment banking, possibly fifteen out of one hundred propositions will be given a secondary check, while of the fifteen, two or three will reach the stage of final decision and commitment.

In the financing of an industrial unit, it is frequently necessary to call upon the services of specialists, such as the engineer, lawyer, certified public accountant, patent lawyer, etc. Each of these specialists represents a distinct and limited function in any complete industrial analysis.

Frequently the combined efforts of these specialists fail to produce a complete and satisfactory analysis. However, this is due in part to the failure of each specialist to realize the full significance of the other's work and in part to improper instructions by those employing him. This is particularly true of the

investment banking field, where engineers, accountants, and lawyers are commonly employed on a special piece of financing. In spite of the combined efforts, a Complete Analysis does not necessarily result.

The engineer's analysis is often limited to the appraisal of fixed assets, or to the efficiency of plant layout, omitting such important factors as the capability of the plant personnel, the economic advantages and disadvantages of the plant location, and similar pertinent factors. It is not that the engineer is incapable in these respects but rather that he has been instructed and paid to do only such limited work. Similar limitations are put upon the accountants and lawyers. The accountants are asked to prepare the balance sheet and the profit and loss statement. The accountant, in doing this, makes a physical count of the cash on hand without comment as to its adequacy. Again, he may make an audit of the inventory without a report as to its physical condition. The lawyer similarly renders an opinion as to the technical accuracy of the company's contracts but usually does not advise how they might be improved from the standpoint of the economic or financial aspects of the enterprise. There is frequently a distinct conflict between the ethics of the profession and the requirements of the business man. It is, however, largely the banker's fault, since there is nothing unethical in issuing specific instructions to lawyers, accountants, and engineers as to requirements.

The employment of specialists in industrial analysis is of no advantage unless their efforts are so controlled and coordinated that no phase of the Complete Analysis is omitted. An appraisal by engineers, an audit by accountants, or a legal opinion by eminent counsel does not in itself constitute an adequate business analysis, as can be substantiated by a number of recent industrial receiverships.

Industrial Analysis and the Small Investor.—Another important group of investors is represented by the small individual

investor who, because of the limitations of time, facilities, and expense, is necessarily obliged to confine his analysis of industrial securities to the established sources of published information. To meet his needs, there is also developed in this volume a method of Limited Analysis.

The small investor's problem may be divided into two distinct parts. On the one hand, there are constantly presented to him new offerings of industrial securities by all types of investment houses. The analytical methods required in the consideration of the new issues and offerings present a unique problem in industrial analysis. These offerings range from the most conservative first mortgage bonds to the most highly speculative oil stocks, or even to fraudulent promotions against which the investor must constantly keep on his guard. The analysis of a typical offering circular represents the application of the technique of Limited Analysis to the security in question. Frequently, sufficient unfavorable information may be obtained from the offering circular itself so as to make it unnecessary to carry analysis any further.

The second group of securities open to the small investor represents the large number of stocks and bonds which have already been issued or previously offered to the public, and which are now regularly traded in through either the listed or unlisted markets. In some cases a wealth of information is available on these securities, including their quoted price ranges. The better known securities are summarized, analyzed, and rated in the security manuals, such as Poor's and Moody's, and in the many investment and forecasting services, such as the Brookmire, Standard Statistics, Alexander Hamilton Institute, and many others. With these existing issues, a great deal of information has to be assembled and the questions of price range and marketability of the issues play an important part in the decision as to a commitment by the small investor. In industrial securities, the fluctuations are generally much greater than in rails and public utilities, and consequently, the feature of marketability plays an important part in view of the large degree of protection it affords.

Industrial Analysis and the Speculator.—There are distinct limitations to the application of industrial analysis to speculation, due largely to the lack of correlation in time and availability of industrial information with the market action of the security. In the case of short-pull speculation, the trader is interested more in the day-to-day movements of the market. To this end he is not concerned so much with the underlying conditions of the particular security as he is with the technical position of the market. For the short-pull market speculator, industrial analysis is of relatively little value.

However, there is another important group of people interested in the long-pull speculative possibilities of securities. To this group industrial analysis is of the greatest importance. Enterprises which have just passed through receivership and which may enjoy a remarkable recovery in earning power, often represent very profitable ventures for those persons who are able to see clearly the future possibilities of such companies. Companies like Republic Iron & Steel, American Chicle, and General Motors have shown remarkable recovery of earning power after reorganization or readjustment of management and financial set-up. On the other hand, companies such as the American Writing Paper, Virginia-Carolina Chemical Company, Wickwire Spencer Steel Company, and others, which have passed through reorganization, have shown relatively little progress, or else have failed a second time due to adverse economic conditions or to a subsequent improper reorganization set-up. To the speculator in such securities as these, careful industrial analysis is of the greatest importance in deciding on a long-pull speculative commitment.

Furthermore, it is important to distinguish between stock and bond speculation, particularly as the latter may be represented by convertible bonds or by bonds with stock purchase warrants attached. In recent years there has been a noticeable increase in the number of offerings of convertible bonds as well as bonds with stock purchase warrants attached, which have provided an attractive means of speculation to the investor. The appreciation

in value of such bonds is significant and indicative of the possibilities open to the speculator in industrial securities over a relatively long-pull period. Many such opportunities are directly traceable to the results of a careful industrial analysis.

Opportunities in long-range stock speculation have been detected in the past by a complete industrial analysis of such companies as General Motors, when in 1921-1922 the Du Ponts assumed control; and on other occasions, of American Smelting and Refining, American Bank Note, American Radiator, United Fruit, and many others.

CHAPTER II

THE ANALYTICAL PROCESS

Steps in Analysis.—It is appropriate at this point to define the so-called scientific method of approach in industrial analysis. This method is dignified by the name scientific, whereas in fact it is the simple "common sense" process that capable business executives use without actually knowing that it is a scientific method. In short, people who make sound business decisions automatically think along the line of this scientific point of view.

Briefly, the scientific method consists of the five following steps:

1. Getting the problem clearly in mind
2. Accumulating the data
3. Classifying the data
4. Drawing conclusions
5. Checking conclusions

Getting the Problem Clearly in Mind.—When a business executive undertakes an analysis of a situation, it is assumed as prima facie evidence that he has the problem clearly in mind. Unfortunately, this is not always the case. Assume that he is confronted with the problem of increasing the margin of profit as well as the total profits. This, in itself, is too general a problem for him to cope with. He must break down this general problem, and by doing so, he may find that his sales are satisfactory but that his manufacturing costs are too high. By breaking down the manufacturing costs, he may find that his raw material cost is correct but that his converting costs are out of line. Therefore, his problem resolves itself specifically into a readjustment of available men, machines, and methods in order to reduce the cost of production without creating any labor dissatisfaction and

without injuring the quality of the product. He has now placed his finger on the specific ailment and can proceed to apply the remedy.

Accumulation of Data.—This step is not as difficult as it might appear on the surface. It is important to be able to acquire data without the expenditure of too much time and money. It is also important to realize the limitations of such data. For instance, in accumulating figures from the United States Department of Commerce on the manufacture of silk stockings, it is important to read all the qualifying provisions given on those data. The survey covers a limited number of all mills in the country and is usually somewhat out of date at the time it is published in the Census of Manufacturers. The next step in this case would be to inquire at the Silk Association of America, which provides the figures for the Department of Commerce. The association can frequently provide figures that are more up-to-date, but they, too, will have certain limitations, in that they may represent only a part of the mills in the country. However, data of this kind are useful when their limitations are understood. It also follows that one of the best sources of information on industries is the various trade associations representing the industrial activities of the country. Experience has shown that these association officials are quite willing to cooperate with a manufacturer or investment banker for the obvious reason that the improvement or investment in an individual company will benefit the industry as a whole, and anything that benefits the industry will, indirectly, help the association.

Practically all the material needed by bankers for a Preliminary Analysis is presented with the business proposition. The industrial executive can order from his accounting department such figures as he needs for an analysis. The large investor will be supplied information by the financial institution that is attempting to sell him securities. Assembling material for a Complete Analysis is more involved, since such an analysis re-

quires considerable field data which must be accumulated by the various investigators employed for this work.

Classification of Data.—It is necessary in an industrial analysis to classify the data so that the following points can be adequately covered, as such classification leads to a better understanding of the situation and presents the various factors in order of their relative importance.

1. Industry
2. Business
3. Physical plant
4. Sales
5. Organization
6. Product
7. Comparative balance sheets
8. Comparative profit and loss statements
9. Vertical check (comparison with other companies)
10. Decision

Each of these steps will be discussed in detail in the subsequent chapters. However, the nine major elements have been indicated which go into a Complete Analysis and which should form the basis of an intelligent decision. It is astonishing how the decision will become obvious if these steps have been adequately covered. It is also important that this general procedure be modified to fit the varying requirements of its users. The business executive who analyzes his general problem and finds, for example, that his manufacturing costs are excessive, will take the problem of physical plant and break it down in greater detail. Similarly, the man who buys securities for an insurance company is probably approached with 1,500 or 2,000 new issues a year. Of these he may buy 50 different issues. It is apparent that he could not possibly make a physical plant inspection on this volume of business. However, methods will be outlined whereby substitutes or short-cuts may be developed for the various detailed steps outlined in a Complete Analysis.

Drawing Conclusions.—The process of drawing conclusions from the assembled data is the real responsibility of the industrial analyst. If the various steps of the Complete Analysis are properly covered, the final decision becomes obvious.

For instance, assume that the analysis reveals that the industry is on an unsound economic basis in that it is vastly over-developed and that competition is very unfair. However, the business of a particular company may have been maintained at an approximately constant volume but the margin of profit may have been steadily declining. The physical plant is being used at about 50% capacity. It is increasingly difficult to maintain sales. An analysis of the figures reveals that the company is well managed and indicates that the expenses are under control. Furthermore, it is evident that the company and product bear an excellent reputation.

One can conclude from such data that some companies in this industry must fail but that this particular company will probably be able to withstand the process of elimination. For purposes of issuing bonds such a situation would be unfavorable, since the factors requiring control are purely economic and quite beyond the scope of the management. Likewise a skilled investor would not "buy himself" into a situation of this kind until the economic picture had sufficiently improved to make the outlook more promising.

On the other hand, assume the analysis reveals that the chief reason for not making sufficient profit is excessive cost of production. Production problems are usually quite easy to remedy and, furthermore, are easy to measure. Thus, it might be found that the expenditure of $100,000 for the purchase of new machinery and the rearrangement of the plant would correct a condition of productive inefficiency. Such financing might easily be entered into, with the provision that the $100,000 be expended on rehabilitation of production facilities.

Checking the Conclusion.—In this step it is necessary to check the conclusions of the entire analysis. The conclusions of

each step should be checked at the time that step is covered and properly summarized into the final decision. In making an analysis one frequently becomes so involved in the details that some of the more apparent general aspects of the problem are overlooked. The final check of conclusions should be centered chiefly in determining the fundamental economic soundness of the decision. This can be illustrated in a rather crude way by asking the simple question, "What of it?" Take the case which has just been cited, where the analysis reveals that the chief obstacle is the company's failure or inability to operate profitably without the expenditure of $100,000 to modify its plant. What of it? Simply this, that if the investor puts into this business the necessary $100,000, it will be converted from a non-profit business to a perfectly sound industrial enterprise.

The Preliminary Analysis.—The analysis of the securities of industrial enterprises will be considered from the standpoint of the following interests:

1. The investment banker
2. The large investor
3. The small investor
4. The speculator

In connection with the requirements of these interests, in fact, in all industrial analysis, it is necessary first to make a Preliminary Analysis in order to determine whether or not the business warrants the expenditure of time, effort, and money necessary for a Complete Analysis. In the case of the large investor, it is safe to assume that such an individual might make commitments of at least $100,000 at a time. Obviously, such an individual will not buy without a Complete Analysis. However, 90% of the propositions presented can be eliminated, with an obvious saving, as a result of the Preliminary Analysis.

For purpose of definition there may be borrowed from electrical engineering the expression "external characteristics." The

external characteristics of an industrial enterprise are the obvious facts that can be revealed by brief examination of the company's history and financial statements. It is the purpose of the Preliminary Analysis to determine the external characteristics of an industrial enterprise. These external characteristics are, briefly, as follows:

1. The industry
2. The business
3. Balance sheets
4. Profit and loss statements

The Industry and the Business.—It is only necessary to examine the economics of the industry in which the company operates as the first step in the Preliminary Analysis. Certain investment bankers limit their activities to specific fields of endeavor. Naturally, any business outside of their field would be rejected by them simply because of the industry it represents. The same is true of the large investor.

The business of the particular company is the second factor entering into the Preliminary Analysis. It is a generally accepted economic principle that a business is more stable the nearer it operates to the ultimate consumer. Thus, the retail grocery business, operating close to the ultimate consumer, is not subject to as much economic fluctuation as the textile mill operating in a position remote from the ultimate consumer and subject to heavy seasonal and economic disturbances. Consequently, the more remote from the consumer that an enterprise operates, the more speculative is its character, with the result that its profits and losses are generally magnified. The local grocer generally has a substantial increase in net profit if his gross increases 10%. On the other hand, the textile operator might readily run from a large profit to a large loss through a moderate decrease in the price of finished cotton or woolen goods. It therefore follows that the analysis should reveal whether the company is in the

highly speculative converting or manufacturing field, or in the more secure retail field. However, most large businesses are not limited to one particular stage of activity. A company in an extractive industry, such as coal mining, might also sell part of its output through a retail distributing organization. It might also economically erect an electric power plant at the mine mouth and become a retail distributor of electric power.

The third important factor in a Preliminary Analysis is the interpretation of financial statements. Adequate interpretation demands a clear understanding of a large group of important underlying factors. Successful financial statement analysis is, therefore, necessarily built up not only around an accounting consideration of the figures themselves, but in addition around a clear knowledge of the underlying economic, financial, and managerial factors. A great many questions of a general nature must be answered by the analyst as he considers the financial statements. The more important factors are listed and grouped in Figure 2 under the four major points of analytical attack.

Many of these factors will be discussed at length in subsequent chapters. Illustrations of the favorable or unfavorable effect of such underlying factors will be cited in the cases of specific companies. In summary, the following may be noted.

Accounting Factors.—Before confidence can be placed in any financial statements which may be presented for consideration, simple questions of whether the accounts of the enterprise have been audited, the reputation of the auditors, and the scope of their certification, must first be answered with complete satisfaction. In the case of large corporations, official figures can generally be relied upon as to their accuracy and completeness. However, it is not uncommon to find investment bankers as well as large investors insisting upon an independent audit by an impartial accounting firm, or one in whom they have greater confidence. Especially important is the degree and scope of the certification, and frequently more than the usual balance sheet

I Accounting	II Finance	III Economics	IV Management
a. Audited or otherwise	a. Capitalization structure; over or under capitalization	a. Economic importance of industry	a. Past record of management
b. Interpretation or certification	b. Surplus and dividend policy	b. Size and age	b. Character of management
c. Degree of detail and classification of accounts	c. Credit policy to customers	c. Trend	c. Efficiency of management
d. Period of time covered by profit and loss statement	d. Purchasing policy	d. Period of general business cycle	d. Aggressiveness of management
e. Reputation of auditors	e. Method of financing additions and improvements	e. Period of specific industrial cycle	e. Financial or banking sponsorship
f. Date of balance sheet with reference to seasonal factor	f. Depreciation and depletion policy	f. Company's position in industry	f. Insurance protection
g. Are statements signed?	g. Policy as to bank borrowing	g. Monopoly	g. "Over" or "under" organization
h. Balance sheets before and/or after financing	h. Selling and advertising policy	h. Tariff protection	h. Policy as to research
i. Treatment of reserves	i. Hidden assets	i. Wasting assets	i. Control and ownership—"closed corporation"?
j. Are all earnings and expenses shown in the proper accounting period?	j. Hidden reserves	j. Large investment in foreign countries	j. Form of organization
k. Classification of deferred assets and prepaid charges	k. Valuation of assets	k. Seasonal factor	k. Fire record
l. Treatment of contingent liabilities?	l. Contingent reserves representing patent litigation or other legal action	l. Degree of integration	l. Liens and judgments
m. Consolidated or corporate statement	m. Maturity of floating and funded indebtedness	m. Sources of raw material	
n. Treatment of intercompany accounts	n. Dividend record	n. Style factors	
	o. Loans to and from individuals, employees and officers or directors	o. Strikes and labor difficulties	
	p. Status of real property (a) Owned in fee (b) Leased	p. Shift of business centers	
	q. Flexibility of certificate of incorporation and charter	q. Plant location and transportation facilities	
	r. Nature and source of surplus and invested capital	r. Flexibility of plant uses	
		s. Value of by-products	
		t. Tax position	
		u. Labor and employment policy	
		v. Nature of competition	

Figure 2. Underlying Factors in Financial Statement Analysis

audit will be insisted upon as the first step in a Complete Analysis.

The period of time covered by the statements submitted is of importance. Generally an industrial enterprise will seek to close its business year at the time when the best showing can be made. Frequently, an annual report prepared as of December 31, the close of the year, will show a strong cash position with no bank loans. However, early in January heavy commitments may be made, loans incurred, and the excellent liquid working capital position be materially altered. The degree of classification of accounts in the balance sheet and statement of profit and loss may be purposely inadequate in the usual annual report and more detailed schedules are necessary before an adequate analysis is possible. Financial statements which have been "window dressed" in various ways are not satisfactory to the investor or the banker as a means of determining the company's true financial condition. Likewise, statements which are too old and out of date are equally unsatisfactory.

In small businesses the simple question of whether the statement is signed by a responsible officer is an important feature of protection. Likewise, the treatment of reserves, contingent liabilities, and intercompany or officers' accounts is of importance. In later chapters on the balance sheet and profit and loss statement analysis, further consideration will be given to many of these underlying factors.

Financial Factors.—In financial statement analysis, it is often unwise to place implicit faith in values as represented in the audit. The analyst should bear in mind that a balance sheet is essentially a statement of opinion rather than fact. The cash account represents an item that can be readily and accurately checked. However, this is not true of such an item as the fixed asset account. The fixed asset account of a corporation sometimes is over-valued. Thus a false impression might be created from an examination of the balance sheet. A company which in

1917 owned a plant worth $1,000,000, might conceivably have it appraised today on the basis of its cost of reproduction less depreciation. This valuation might easily be twice its real productive value and would obviously increase the net worth. Such practices are quite common in industrial financing. The real value of an industrial plant is measurable in terms of productive capacity. Ice plants, for instance, are worth approximately $2,000 per ton of daily ice capacity. Thus, a 100-ton plant would be worth 100 × $2,000, or $200,000. If part of the plant became inoperative and its capacity reduced to one-half, it would be worth $100,000 regardless of the appraised valuation of the bricks, mortar, and machinery. The investor and the executives of industrial enterprises should deal only in productive fixed asset values and not in terms of those cost or replacement values carried on the books.

A corporation doing a certain gross business per annum requires an inventory that bears a definite relation to its gross business, depending upon the availability of raw materials, the period of conversion, and the terms of sale. An industrial business should be run strictly on the basis of earning a margin of profit from the manufacture and sale of goods and not in the speculation of raw materials. Inventories reach huge proportions in enterprises such as the rubber tire industry, where 80% of the cost of manufacture is in valuable and highly unstable raw material. A company should purchase only sufficient raw material to cover actual sales. Out-of-style inventory should be valued, not at cost, but at its discounted price, namely, what it will actually bring in sale.

Over-investment in receivables is an ailment which very frequently accompanies highly competitive conditions. Here again, the quantity of receivables should bear a direct relation to the annual amount of business and to the terms of sale. Over-investment in receivables was strikingly illustrated by the condition of many companies in the highly competitive fertilizer industry. It is impossible to lay down any specific ratios, be-

cause the conditions vary so widely in different types of business and at different seasons of the year.

In order to determine the sufficiency of working capital, it is necessary to know, among many other factors, the gross business and the terms of purchase and sale. Working capital is defined in accounting and by some financiers as the total current assets minus the total current liabilities. This is a poor measure, because the asset account might include slow inventory and accounts of doubtful liquidity. The cash in the asset account is the most significant single item. Probably no one industrial ailment is as common as insufficient working capital, which in many cases is the direct result of over-expansion of inventory and frozen receivables.

The financial structure of a corporation is the final item that should be checked in a statement analysis. Generally speaking, the total funded debt should not be over 35% of the entire capitalization, after making due allowance for inflation in the fixed asset and other accounts. The lower the percentage of funded debt, the more desirable is the financial position of an industrial enterprise. The reason for this is obvious. The bonds represent fixed charge requirements which must be met if the company is to continue under the present ownership.

An analysis of the profit and loss statements should be made for the one most important item in an industrial enterprise, namely, the measure of profit. Fundamentally, all industrial organizations are organized for profit. The indicated profit is not necessarily the real profit of the company. The gross business and the net business are usually correct. The operating expenses and the selling and administrative expenses are real quantities that can be definitely measured. The next figure arrived at is the net operating profit. Beyond this item come the more or less flexible deductions that might be misleading in the determination of the real profit. Obviously, the bond interest is an exact quantity. The deferred items should be proportionately amortized over the period of their existence. Depreciation and depletion

should be charged as an operating expense, and it is highly desirable that these charges be properly indicated. It is in these items that inflation of the fixed asset account invariably asserts itself. The corporate profit is not real until full depreciation and depletion charges have been made. The net amount remaining after interest and amortization of deferred charges, depreciation, and depletion is now subject to corporate income taxes. After deduction of all taxes, the net profit available for dividends is determined. It is surprising how this net profit figure will vary due to depreciation and depletion policy, which in many concerns represents no policy at all.

Economic Factors.—The consideration of economic factors is of prime importance in financial statement analysis. A specific company's position in an industry is affected by the operation of such economic factors as style changes, seasonal fluctuations, plant location, and labor difficulties. Very often such underlying factors as these go a long way in explaining unsatisfactory financial results. Activity and large investments in foreign countries are important considerations in the automobile industry, while the value of by-products and location are paramount to the meat-packing industry.

Much has been written of the business cycle. However, greater attention is being paid to the specific conditions operating within different lines of industry. Thus, it is not uncommon to find at times a high level of prosperity and activity in the automobile industry with chronic depression existing in the automobile tire industry. In much the same way, wide variation in business conditions is found to exist within different sections of the country and the world. While the manufacturing sections of the East and Middle West are enjoying a state of relative prosperity, depression may exist in the farming sections of the West and Northwest. Activity might be at a high level in the non-union coal fields of West Virginia and Illinois, while the union fields of Pennsylvania are virtually shut down or on reduced schedules.

Such specific conditions may, by curtailing the operations of outstanding lines of business in such sections, not only reduce or totally eliminate the profit of these local enterprises, but in many cases exert a far-reaching and sympathetic influence upon complementary lines of industrial activity.

Management Factors.—In the final analysis, managerial capacity is the determining factor of success. In the field of credit much has been said of the three C's—character, capacity, and capital. Management, being the most difficult factor to appraise accurately, is reduced to a highly personal basis.

Capacity and aggressiveness of management can be analyzed quite successfully on the basis of past performance, and from reports and opinions in the trade. The records of the company's insurance protection, while evidence of good judgment on the part of the management, will not replace those tremendously important elements of success represented by the human factor. Much progress has been made in the technique of managerial organization and function. However, money received through insurance and surety bonds cannot buy character, integrity, and inherent capacity.

Balance Sheets and Profit and Loss Statements.—The analysis of financial statements is so technical that several chapters are devoted to the subject. The statement analysis is made to detect the favorable and unfavorable elements.

Many industrial ailments can be detected through a comparative statement analysis. It is appropriate at this point to summarize those ailments generally revealed through an analysis of the balance sheet and profit and loss statements.

Many of these ailments may be detected from a Preliminary Analysis. However, a Complete Analysis is generally necessary in order to definitely determine their existence and their probable ultimate effect upon the particular industrial unit and its securities.

THE BALANCE SHEET

1. Weak cash position
2. Insufficient working capital
3. Over-investment in receivables
4. Over-investment in inventories
5. Over-investment in plant and property
6. Excessive advances and investments in subsidiary and affiliated companies
7. Excessive goodwill and intangibles
8. Over-capitalization and unbalanced capital structure
9. Excessive funded debt
10. Excessive current debt
11. Inadequate depreciation and other reserves

THE PROFIT AND LOSS ACCOUNT

1. Inadequate gross sales
2. Excessive sales returns and allowances
3. Excessive production expense
4. Excessive selling expense
5. Excessive advertising and promotional expense
6. Excessive administrative expense
7. Excessive interest and other fixed charges
8. Excessive dividends and withdrawals
9. Inadequate depreciation
10. Insufficient profit

The Complete Analysis.—The Complete Analysis is made as a result of a favorable Preliminary Analysis and is designed to determine the internal rather than the external characteristics. Such an analysis is generally quite expensive and involves considerable field work. It includes a detailed consideration of the various factors tabulated on page 18.

It is necessary in the Complete Analysis to carry the work of analyzing the industry down to greater detail than is done in the preliminary check. No industry is ever stationary. Industrial activity in any particular field is either in a definite state of improvement and expansion or decline and contraction. A study of the total statistics on any particular industry will reveal quite accurately the general condition of that industry. For purposes of sound investment it is essential to have an established industry showing an increasing volume of activity. For purposes of speculation it might be desirable to enter an industry at a time when that industry is very near its low point of activity.

In the Complete Analysis the business should be analyzed in detail, particularly to determine the various components of gross sales. In order to do this it is necessary to break down the item of gross sales. It has been explained that very few companies are one-product industrial units. The Ford Motor Car Com-

pany, for example, sells almost exclusively pleasure cars, trucks, and tractors, and all integrated operations are directed toward that one end. Such a gross business account would be relatively easy to analyze. The Rockwall Company, as analyzed in Chapter IX, has its gross sales made up of business done in wallboard, gypsum products, paint, sheet-roofing, composite roofing, and newsprint. A study of these various lines of activity will indicate that although they are practically all affected by the conditions in the building industry, there is very little reason why they should be consolidated from a manufacturing or selling standpoint, due to the dissimilarity of manufacturing procedure and selling technique.

Quite aside from the valuation of the plant, it should be inspected as to general conditions. A clean and orderly plant generally reflects an efficient and competent management. Conversely, a dilapidated and neglected plant reflects dangerous and inefficient management. The plant should be inspected as to working conditions and particularly as to the correct departmental flow of goods. In other words, the various departments should be located geographically within the plant so that the work flows smoothly from one operation to another.

Another item that the analyst must cover is the composition of the plant account, which is usually made up of land, buildings, and machinery. In point of illustration, a recent case of an automobile tire company, examined for underwriting purposes, may be cited. The machinery and equipment was capable of producing 3,000 tires a day. The buildings housing this equipment were capable of accommodating once again as much equipment, or in other words, were adequate for a 6,000 unit per day capacity plant. The industrial site, owned by the company, was large enough to provide for a plant four times the present productive capacity. The lack of balance is obvious. It can be seen that one-half of the present building capacity and 75% of the land capacity was unproductive. The investor is concerned with productive ca-

pacity. The particular company in mind was seriously embarrassed by this condition, since the management was unable to expand its sales beyond an average of 3,000 tires a day.

The field study should also cover plant depreciation. There are standard rates that can be applied to the different types of machinery. The investigator must realize that if 5% per year is the normal depreciation on a machine and the machine is run three shifts per day, the depreciation obviously advances to 15%. Included in Chapter X ("The Limited Analysis"), is a table showing how this depreciation calculation can be applied and checked.

In the Complete Analysis it is necessary to take the gross sales over a period of years to be certain whether or not they have kept pace with the activity in the entire industry. Assume that the gross sales of a company increase 10% a year. This might, on the surface, be a good showing. It would be a rather poor showing if the industry at the same time had grown 25% per year. One need not be surprised at a 25% growth when one considers the history of the motor car industry, the moving picture industry, and more recently, the figures on aviation.

Finally, it is necessary to make a field investigation of the company's market and the sources of distribution of its competitors. Such an investigation should include a considerable number of interviews in the trade so that a representative picture of market conditions can be obtained. It is at this point that the services of marketing experts are frequently employed. Companies that sell a good product, live up to their promises, make prompt deliveries, and maintain cordial relations with their customers are doing everything in their power to develop adequate markets. Companies that sell on various club offers or other special sales devices are seldom substantial.

It is necessary in the field study to determine the capacity of the management. In any organization, in addition to the president, there should be four key executives, the sales manager, the production manager, the accountant, and the financial executive.

It is the business of the chief executive to coordinate the efforts of these four subordinate officers. The efficiency of the four executives can be measured in part from the financial statements. However, a personal appraisal should be made of the capabilities of all of these executives as a final check.

In checking the management, the board of directors must not be overlooked. The fact that a directorate is composed of ten prominent men is no assurance that these men are particularly interested in and cognizant of the affairs of the company. Continuous discord, apathy, and inability on the part of the members of the board will quickly operate to the detriment of the company.

It is comparatively easy to determine the reputation of the product when the investigator makes his field check among the customers of the company. The product at this time should be compared with competitive products as to price, quality, and the like. A company that proposes substituting a new product for a non-profitable unit has a serious speculative problem at hand. The motor car industry is an excellent example of this feature. In a given year the new Cadillac reaches record sales, while new models simultaneously produced by other companies may fail to show increases in business for those organizations.

The comparative balance sheet analysis and the comparative profit and loss statement analysis must now be made in greater detail than was required in the Preliminary Analysis. Information more detailed than that usually published must be obtained from the company for a Complete Analysis. This frequently requires an independent audit or direct recourse to the company's books of account. In addition, a "vertical check" must be made by comparing the current financial statements of the company with those of competitors. An additional check can be made by the creation of an ideal balance sheet and profit and loss statement, based on a development of a balance sheet and sales dollar for the industry. As the statement analysis constitutes a study in itself, the chapters immediately following are designed to cover in detail this phase of industrial analysis.

The Limited Analysis (Excluding Field Study).—There are innumerable investors of all types interested in industrial analysis who are not equipped from the standpoint of time and facilities to make the Complete Analysis. On the other hand, the large investor is interested in an accurate and substantial analysis, but he cannot leave his desk to make a field study of every situation that merits his attention. For this type of investor it is necessary to modify a consideration of the various steps in the Complete Analysis, as outlined on page 18.

The large investor can either analyze for himself the available figures or demand additional data from the company under consideration, in order to cover steps 1, 2, 4, 7, 8, and 9 in the outline on page 18. On steps 3, 5, and 6, he needs information that is not ordinarily given, but on these three steps he can operate as follows.

A layout of the plant indicating the productive capacities of the different departments can be obtained. From this the real quantity of productive assets can be approximated. Also from the plant layout a general idea may be obtained as to the flow of production.

The independent investor can get from the company the names of some of the company's customers. With this list he can then proceed to make his own hasty field check over the telephone. An organization chart of the company may be requested and along with this there should be made available the detailed personal history of the president and his four "key" executives. From this information the capacity of these respective individuals may be determined in a limited way without making the appraisal of management by personal interview.

It is apparent that the Limited Analysis is not as effective as a Complete Analysis. However, it must be used at times because of the necessity for a saving of time and money.

CHAPTER III

THE BALANCE SHEET ANALYSIS

Successful balance sheet analysis, as an important step in the Preliminary Analysis of industrials, is built up not only around an accounting and financial consideration of the figures themselves, but in addition rests, as has been indicated in the previous chapter, upon a clear knowledge of the economic and managerial aspects of the particular organization whose statements are being considered. Many of these questions of a general nature must first be answered in the analyst's mind before setting up the statement in analytical form and drawing conclusions.

Having determined the character and capacity of the management, the economic peculiarities of the industry, and the accounting accuracy of the figures, the next step is to proceed with an analysis of the various balance sheet accounts and their arrangement into a convenient analytical form.

The Balance Sheet in Analytical Form.—Balance sheets appear in many different forms. In the customary account form, the various asset accounts are listed on the left-hand side, while the liabilities, reserves, capital, and surplus appear on the right-hand side. Frequently these various asset and liability accounts are not classified or listed in any particular order, nor are they grouped as to their status as current assets, fixed assets, tangible and intangible assets.

Capital accounts frequently are not carefully separated from liability accounts. In such cases it is necessary for the analyst to have a working knowledge of accounting and finance as a foundation for statement analysis so that he may properly arrange these items in their order of liquidity and maturity. The statements in Figures 3 and 4 taken from the annual reports of well-known

Rolls-Royce of America, Inc.

BALANCE SHEET AS AT DECEMBER 31, 1926

ASSETS

Cash, Notes and Accounts Receivable		$ 636,279.28
Inventories		2,766,479.14
Company Bonds Held in Treasury ($230,000.00 Par Value)		205,660.00
Investments in Other Companies		202,500.00
		$3,810,918.42
Land, Buildings, Machinery, etc., less depreciation		1,497,562.52
Trade Name, Patents, Goodwill, etc.		1,472,537.20
Deferred Charges		79,651.61
		$6,860,669.75

LIABILITIES

Accounts Payable, including Accrued Wages, Insurance, etc.		$ 863,261.00
Fifteen Years Sinking Fund 7% Bonds		1,825,000.00
Reserve for Federal Taxes and Contingencies		116,423.19
Capital Surplus		155,954.03
Capital Stock:		
Issued:		
Preferred Stock—35,000 shares 7% Cumulative—Par Value $100.00 each	$3,500,000.00	
Common Stock—35,000 shares No Par Value	175,000.00	
	$3,675,000.00	
Surplus	225,031.53	3,900,031.53
		$6,860,669.75

Contingent Liability on Notes Receivable Discounted, $275,207.86
Preferred Stock Dividends unpaid from August 1921 to August 1926.

The Company is also liable as guarantor of the Interest and Sinking Fund Payments on $400,000 of the 7% Second Mortgage Bonds of Brewster & Company, Inc.

Figure 3. Example of an Inadequate Balance Sheet as Reported in an Annual Report

The American Rolling Mill Com

CONSOLIDATED BALANCE

ASSETS

REAL ESTATE, BUILDINGS, MACHINERY, AND EQUIPMENT			$ 83,819,919.31
INVESTMENTS IN AFFILIATED COMPANIES, NOT CONTROLLED			6,636,075.55
CURRENT ASSETS:			
Cash, United States securities, and call loans.		$ 3,043,965.80	
Marketable securities		384,954.14	
Accounts and notes receivable—Customers (less reserve of $118,684.80)		5,101,572.69	
Due from employees on sales of stock and houses		1,054,559.79	
Inventories:			
Finished and in process products	$8,000,573.17		
Raw materials and supplies	8,055,660.99		
Rolls, moulds, spares, etc.	3,077,400.62	19,133,634.78	
Total current assets			28,718,687.20
SECURITIES IN HANDS OF TRUSTEES FOR GUARANTEE OF TWO YEARS DIVIDENDS AND RETIREMENT OF PREFERRED STOCK, OLD ISSUE			66,400.00
DEFERRED CHARGES:			
Unamortized debt discount and expense		$ 1,094,100.85	
Other deferred charges		402,913.42	
Total deferred charges			1,497,014.27
TOTAL			$120,738,096.33

Net Current Assets $21,949,345.20 (28,718,687.20 – 6,769,342.00)

Figure 4. Example of an Adequate and Well-Arranged

pany and Subsidiary Companies

SHEET, DECEMBER 31, 1928

LIABILITIES

CAPITAL STOCK:			
The American Rolling Mill Company:			
6% cumulative preferred stock (old issue)	$ 88,400.00		
6% cumulative preferred stock (Series A)	5,000,000.00		
Common stock	30,024,975.00		
Common stock scrip	13,526.25	$35,126,901.25	
Minority stocks of Subsidiaries		52,020.00	
Total capital stock			$ 35,178,921.25
FUNDED DEBT:			
5% sinking fund gold debentures, due 1948 (less $466,000.00 in treasury)		$24,534,000.00	
Serial 5% notes, due 1930–1932		2,250,000.00	
First mortgage, 6% serial gold bonds of the Columbia Steel Company, due 1932–1947		5,000,000.00	
Sundry subsidiary companies		348,781.85	
Total funded debt			32,132,781.85
CURRENT LIABILITIES:			
Accounts and notes payable		$ 3,961,290.76	
Dividends payable		600,871.50	
Accrued salaries and wages, property taxes, etc.		1,143,450.75	
Accrued Federal income tax		813,728.99	
Serial 5% note due August 1, 1929		250,000.00	
Total current liabilities			6,769,342.00
RESERVES:			
Depreciation and depletion of property		$22,073,209.81	
Current operating reserves		659,328.07	
Fire insurance (funded)		168,870.40	
Total reserves			22,901,408.28
SURPLUS:			
Profit and loss surplus		$12,052,614.34	
Surplus arising from premium on sales of capital stock, revaluation of property, etc.		11,703,028.61	
Total surplus			23,755,642.95
TOTAL			$120,738,096.33

Balance Sheet Appearing in an Annual Report

The American Rolling Mill Company and Subsidiary Companies

CONSOLIDATED STATEMENT OF FINANCIAL CONDITION, DECEMBER 31, 1928

RESOURCES:		
Real Estate, Buildings, Machinery and Equipment	$83,819,919.31	
Investments in Affiliated Companies, not Controlled	6,636,075.55	
Current Assets	28,718,687.20	
Securities for Two Years' Dividends and Retirement of 6% Preferred Stock	66,400.00	
Deferred Charges	1,497,014.27	
Total Resources		$120,738,096.33
LIABILITIES TO CREDITORS:		
Funded Debt	$32,132,781.85	
Current Liabilities	6,769,342.00	
Total Liabilities to Creditors		38,902,123.85
NET WORTH AND RESERVES		$ 81,835,972.48
STOCKHOLDERS' INVESTMENT		35,178,921.25
SURPLUS AND RESERVES		$ 46,657,051.23
RESERVES FOR DEPRECIATION, DEPLETION, AND CURRENT OPERATIONS		22,901,408.28
SURPLUS		$ 23,755,642.95

Figure 4. (*Continued*)

companies, represent two excellent illustrations of the wide variation in the degree of detail in which industrials publish their financial reports.

In the case of Rolls-Royce of America, Inc. (Figure 3), the lack of detail in the classification of assets and liabilities is obvious. Cash, Notes and Accounts Receivable are consolidated into one item and there is no classification as regards current or liquid assets. Fixed assets are carried at a figure net of depreciation and are grouped with intangible assets. Investments in other companies which represent an interest in subsidiary and affiliated companies are carried in such a way with bonds as to make it appear that the company has $3,810,918.42 of liquid assets. Such investments not representing marketable securities should be treated as fixed assets, and the bonds held in the treasury shown as a deduction against the total debt thus indicating the net amount outstanding in the hands of the public. Many other items are open to criticism for the lack of detailed information. The inadequacy of such a statement stands out in striking contrast to that of the American Rolling Mill Company and Subsidiary Companies (Figure 4), which may be regarded as an excellent example of a complete and well-arranged financial report.

While it is sometimes necessary to use different arrangements in analyzing the balance sheet for specialized purposes, there has been developed a form of analytical set-up, which experience has shown to possess certain distinct advantages. Such a method of arranging a balance sheet has been followed in the case of the analysis of the Belding-Heminway Company in Chapter X on Limited Analysis and at other points throughout the book. This particular method of recasting the balance sheet, while a little more complicated than other conventional arrangements, has, as it will be seen, many advantages which far outweigh the slight additional time, effort, and accounting knowledge required to set up the statement in this manner. Fortunately, the method can be reduced to a convenient formula.

However, before discussing the formula and its advantages,

it is necessary to consider the individual accounts that constitute the balance sheet. With this in view it is appropriate at this point to explain the more important balance sheet accounts.

Explanation of Balance Sheet Accounts.—Before the balance sheet can be properly analyzed it is, of course, necessary to understand the accounting content of the various balance sheet items. From an auditing standpoint, these items should represent only certain specific assets and liabilities. Many other items are frequently included, which, however, should not appear in the accounting group in which they may be improperly classified.

Current Assets.—Contrary to many business men's and accountants' opinions, current assets are not those which necessarily mature in one year, but on the other hand represent assets consisting of cash or other items which become converted into cash within the relatively short period of time representing the usual cycle of the company's operations. Thus, for example, if a shipbuilding company takes a year and a half or two years to build a vessel, its raw material inventories, which are legitimately current assets, may take nearly two years to circulate from their raw state into the finished product. The next step is the conversion of that finished product into a receivable, and finally into cash, the major portion of which is used to liquidate obligations, while the balance is used to pay dividends and interest, or is "ploughed" back into the business as reinvested earnings.

The test, therefore, is not an arbitrary unit of time but rather the purpose for which the asset is used, although the question of time is an important one from the standpoint of liquidity. Therefore, the various current assets may be listed and described in the order of time, liquidity, and their proper position in the circulating capital operations of the business. It is in this order that the current assets are generally arranged for analytical purposes. Space does not permit of more than a brief description of these various accounts, and the reader is referred to any standard accounting text for a detailed treatment of such accounts.

Cash.—Cash represents one of the most important of the current assets, and it is the duty of every treasurer and business executive to carefully budget and protect his cash position. Obligations cannot be conveniently paid with fixed assets, inventories, and receivables, hence cash is needed for this purpose as well as to enable the organization to take full advantage of all discounts on purchases. Cash represents currency on hand, together with demand bank deposits, and these include both domestic and foreign deposits. The foreign deposits should be figured at the ruling rates of exchange as of the date represented by the balance sheet compilation. Petty Cash generally represents small amounts of currency and checks kept on hand to meet minor expenses.

Cash on Hand includes currency, checks, and other demand negotiable instruments which are ready for deposit and collection and which have arisen in the ordinary course of business. It is important at this point to note that cash deposits on contracts of purchase and sale, abnormal amounts of cash arising as a result of financing, together with cash in the hands of a sinking fund trustee, should be separately stated and not included in the usual cash account of the balance sheet.

Where possible, cash on hand and cash in banks should be stated separately, for it is by this means that a more accurate test of the cash position can be obtained. Commercial bank policy generally requires from 18% to 25% with an average of 20% balances against borrowings, and gives one the basis for an immediate test of the company's cash position. Therefore, cash should normally represent about 20% to 25% of bank loans or notes payable (to banks).

The cash account obviously should not contain any demand notes or I.O.U.'s covering cashier's or other employees' withdrawals for petty expenses or loans. Cash in transit, representing the payment of advances and receivables of affiliated or subsidiary companies, salesmen, or trade customers, should not be included if abnormally large and from distant points, as it is not available as a strictly liquid current asset.

Any reserves set up on the liability side of the balance sheet covering the fluctuation in foreign exchange or in the loss of foreign deposits should be deducted at this point and the cash account shown at its net figure.

Liquid Investments and Marketable Securities.—These items when appearing as current assets are subject to test. Generally speaking, if the statement is certified by a reputable accounting firm it will include only the following:

1. Government securities and other highly negotiable bonds and stocks which may be sold quickly and easily
2. Call and demand loans
3. Certificates of deposit and time deposits which do not require excessive advance notice of withdrawal

A good example of large amounts of government securities and call loans appearing in a company's balance sheet will be found in Figure 5, which is an extract from the December 31, 1928 balance sheet of the American Locomotive Company. This company was able to pay an 8% dividend on its common stock during 1927 and 1928, because of this strong cash position, even though it was not earned by quite a wide margin. In this instance there will also be found in the current assets railroad equipment trust certificates which have been taken in part payment for rolling stock sold to railroads.

Occasionally one will find reserves set up for the loss in value of investments. Where this is done, the reserve should be deducted at this point, and the account shown net. However, one may contend that if it is necessary to set up such a reserve, such securities should not be included as current assets, and the logic of such reasoning is recognized.

Notes Receivable.—The next item usually appearing in the current asset section is notes receivable, although this generally is not as liquid as the item of accounts receivable. Notes receivable frequently appear in statements as bills receivable, in which case

the promissory note receivable is confused with "bills" (in reality notes) for merchandise sold.

Ordinarily, notes receivable represent accepted drafts (not trade acceptances) and promissory notes arising in the ordinary

CURRENT ASSETS—		
Cash on hand and in banks		$ 2,764,595.87
Call loans		2,000,000.00
United States Treasury certificates	$ 4,499,375.00	
United States Liberty Loan bonds	4,562,406.88	
United States Treasury bonds	11,118,242.81	
		20,180,024.69
Dominion of Canada Refunding Loan bonds		1,547,427.50
Railroad Equipment Trust certificates		5,388,351.07
Other securities		769,691.02
Total Cash and Marketable securities		$32,650,090.15
Accounts receivable		$ 6,951,297.49
Notes receivable		1,471,278.05
Accrued interest		402,727.68
Total Accounts and Notes receivable		$ 8,825,303.22
Less Reserves for doubtful accounts		132,725.87
		$ 8,692,577.35
Inventories—		
Materials and supplies		$ 3,777,096.54
Contract work in process		3,589,942.65
Locomotives and other finished products		464,885.85
Total Inventories		$ 7,831,925.04
Total Current assets		$49,174,592.54

Figure 5. Extract from Consolidated General Balance Sheet of the American Locomotive Company and Subsidiaries—showing marketable securities and call loans as included in current assets as of December 31, 1928

course of business. In contrast to the open account receivable, they represent time settlements with customers for goods sold. In certain lines of business it is the custom to settle by note rather than by open book account, and the lumber, fur, jewelry, and

ASSETS

CASH:
1a. Cash on hand—currency and coin . . . . . $.....
1b. Cash in bank . . . . $.....

NOTES AND ACCOUNTS RECEIVABLE:
3. Notes receivable of customers on hand (not past due) . . ..
5. Notes receivable discounted or sold with indorsement or guaranty . . . .
7. Accounts receivable, customers (not past due) . . . .
9. Notes receivable, customers, past due (cash value, $.....) .....
11. Accounts receivable, customers, past due (cash value, $....) .....
.....

Less:
13. Provisions for bad debts . . . . . $.....
15. Provisions for discounts, freights, allowances, etc. . . . .

INVENTORIES:
17. Raw material on hand . . . .
19. Goods in process . . . .
21. Uncompleted contracts . . . .
Less payments on account thereof . . . .
23. Finished goods on hand. . . . .

OTHER QUICK ASSETS (describe fully):
. . . .
. . . .

TOTAL QUICK ASSETS (excluding all investments) . . . .

SECURITIES:
25. Securities readily marketable and salable without impairing the business . . . .
27. Notes given by officers, stockholders, or employees . . . .
29. Accounts due from officers, stockholders, or employees . . ..
Total current assets . . . .

FIXED ASSETS:
31. Land used for plant . . . .
33. Buildings used for plant . . . .
35. Machinery . . . .
37. Tools and plant equipment . . . .
39. Patterns and drawings . . . .
41. Office furniture and fixtures . . . .
43. Other fixed assets, if any (describe fully) . . . .
. . . .
.....

Less:
45. Reserves for depreciation . . . .
Total fixed assets . . . .

DEFERRED CHARGES:
47. Prepaid expenses, interest, insurance, taxes, etc. . . . .
OTHER ASSETS (49) . . . .
TOTAL ASSETS . . . . . $.....

Figure 6. Federal Reserve Board

LIABILITIES

BILLS, NOTES, AND ACCOUNTS PAYABLE:

Unsecured bills and notes—

2. Acceptances made for merchandise or raw material purchased	$.....	
4. Notes given for merchandise or raw material purchased	.....	
6. Notes given to banks for money borrowed	.....	
8. Notes sold through brokers	.....	
10. Notes given for machinery, additions to plant, etc.	.....	
12. Notes due to stockholders, officers, or employees	.....	$.....

Unsecured accounts—

14. Accounts payable for purchases (not yet due)	.....	
16. Accounts payable for purchases (past due)	.....	
18. Accounts payable to stockholders, officers or employees	.....	.....

Secured liabilities—

20a. Notes receivable discounted or sold with indorsement or guaranty (contra)	.....	
20b. Customers' accounts discounted or assigned (contra)	.....	
20c. Obligations secured by liens on inventories	.....	
20d. Obligations secured by securities deposited as collateral	.....	.....
22. Accrued liabilities (interest, taxes, wages, etc.)		.....

OTHER CURRENT LIABILITIES (describe fully):

.....	.....	
.....	.....	.....
Total current liabilities		.....

FIXED LIABILITIES:

24. Mortgage on plant (due date.....)	.....	
26. Mortgage on other real estate (due date.....)	.....	
28. Chattel mortgage on machinery or equipment (due date .....)	.....	
30. Bonded debt (due date.....)	.....	.....
32. Other fixed liabilities (describe fully):		
.....	.....	
.....	.....	.....
Total liabilities		.....

NET WORTH:

34. If a corporation—			
(a) Preferred stock (less stock in treasury)		.....	
(b) Common stock (less stock in treasury)		.....	
(c) Surplus and undivided profits		.....	
		.....	
Less:			
(d) Book value of goodwill	$.....		
(e) Deficit	.....	.....	.....
36. If an individual or partnership—			
(a) Capital		.....	
(b) Undistributed profits or deficit		.....	.....
TOTAL			$.....

Form of Balance Sheet

agricultural equipment businesses are examples of this method of settlement. Until recently the agricultural fertilizer companies sold extensively to the farmers on a note basis. Business men and bankers are generally familiar with the conditions which found these companies severely embarrassed because of "frozen" receivables and the resulting lack of adequate working capital. One company, the Virginia-Carolina Chemical Company, passed through receivership and reorganization, while other companies in this line suffered tremendous losses. As a result, a substantial revision of credit policy and selling terms has been instituted. In other words, the fertilizer companies have tried to get out of the financial or banking field and return to the manufacture of fertilizer.

Overdue notes should be separately indicated in the balance sheet. In the Federal Reserve Board's recommended form of balance sheet (Figure 6), it will be noted that provision is made for this separation.

Legitimate deductions against notes receivable are such items as reserves for overdue and uncollectible notes, notes receivable discounted, sold, assigned, or pledged, and provisions or reserves for discounts, freights, and allowances. These are deducted sometimes against accounts receivable and then again from notes receivable, depending upon the methods of purchase or sale prevailing in the trade.

The proper notation of contingent liabilities as represented by hypothecated receivables is very important. It is rare to find commercial bankers loaning on unsecured promissory notes and at the same time discounting receivables or allowing the company to do so, with other banks or finance companies. Such practice would undermine the credit foundation of the unsecured loan and in addition would create a prior secured claim in favor of the party discounting the receivables.

Notes receivable representing loans or advances to employees, subsidiary and affiliated companies, subscriptions to stock, accommodation notes, and all other notes receivable not representing

strictly trade notes, should be properly segregated. They may not represent current assets and therefore should be carried as other assets or even as fixed assets in the case of substantial advances to and investments in affiliated and subsidiary companies.

If the notes receivable represent an abnormally large amount and are of an odd figure in the balance sheet, while the custom of the trade indicates that business is done on an open account basis, the analyst can generally conclude that such items include overdue open accounts which have been settled on a note basis. Such notes receivable are distinctly inferior and should be properly evaluated and described.

Where the note receivable is used as the customary method of settlement in the trade, the use of the ratio of turnover helps to determine roughly their liquidity. The method of figuring this receivables ratio is described in subsequent paragraphs of this chapter under the heading, Accounts Receivable.

Trade and Bank Acceptances.—Briefly, the trade acceptance may be regarded as a draft drawn by the seller on the purchaser of goods, having a definite maturity, payable in dollars in the United States without qualification, and accepted by signature of the buyer across the face of the instrument. Representing a trade obligation, it should arise only through the sale of merchandise and to this end, if properly used, should represent a liquid receivable comparable with the open account.

Care should be exercised in the analysis of this item in order to detect excessive contingent liabilities as a result of discounting trade acceptances. When discounted they may be offset on the current liability side by a per contra entry, or they may be treated as a liability deduction from accounts receivable, thus showing the latter account at its net value.

Finally, trade acceptances, when properly used, differ from an open account only in having a negotiable value to the seller, and should under no circumstances be used as a means of funding overdue open accounts or notes receivable.

Bank acceptances are similar in character to the domestic trade acceptance except that a bank or banker whose credit is better known "accepts" for the buyer, with the result that seller has ordinarily in his hands a credit instrument of greater liquidity, safety, and possible negotiability. Bankers' acceptances, therefore, may be regarded as falling more into the class of marketable securities. They are used extensively in foreign trade and in the financing of raw products in bulk, such as cotton, rubber, tobacco, etc.

Accounts Receivable.—Aside from cash and marketable securities, the most important current asset from the standpoint of liquidity is represented by the accounts receivable. Many of the analytical considerations outlined in connection with the note receivable apply equally well to the account receivable, and in the Federal Reserve Board statement previously mentioned, provision is made for the evaluation of accounts receivables.

Obviously, for complete analytical purposes, the accounts receivable should be properly broken down as follows:

I. Accounts receivable due from merchandise debtors.
   (a) Current
   (b) 30 days overdue
   (c) 60 days overdue
   (d) 90 days overdue
   (e) Doubtful of collection

II. Accounts receivable due from salesmen, employees, officers, etc.

III. Current accounts receivable due from affiliated and subsidiary companies and branches for merchandise shipped to them.

IV. Advances made to subsidiaries for working capital purposes only. (All other advances and investments in affiliated and subsidiary companies should be properly indicated and carried in the fixed asset section of the balance sheet.)

Reserves and provisions for bad debts should be deducted from the first group of accounts receivable indicated above, so that the trade accounts receivable are shown net.

The best method of testing the accounts receivable is to take the average amount outstanding over the period of a year, preferably by averaging the statements on either a semi-annual, quarterly, or monthly basis, and dividing the resulting amount into the total net sales for that period. A ratio of turnover is then obtained which, when divided into a year of 360 days, results in an estimated period of days representing the average length of accounts receivable outstanding. When this day turnover figure is compared with the terms of sales, it is possible to determine with a fair degree of accuracy the liquidity of the accounts and the efficiency of the company's credit and collection policy. Reduced to a formula the turnover of accounts receivable may be expressed as follows:

$$\text{Accounts receivable turnover} = \frac{\text{Net sales for period}}{\text{Average outstanding accounts receivable}}$$

$$\text{Average length of period of outstanding accounts receivable} = \frac{\text{360 Days}}{\text{Accounts receivable turnover}}$$

If, for example, the company's terms of sale are 2% 10 days/net 30 days, and the average length of period of outstanding accounts receivable is 40 days, the conclusion may be reached that some of the accounts are overdue.

It is very important, however, that such a conclusion be supported by an examination of the receivables themselves. This is due to the fact that frequently the ratio of accounts receivable is incorrect because of seasonal conditions and varying terms of sale to different classes of customers.

Inventories.—The financial statements and reports of industrials of the manufacturing and trading type contain an asset termed inventories (or some similar title) which should be subjected to careful analysis. The item of inventories on the balance sheet appears to be to some degree a nebulous sort of account when one is required to determine its proper value. It is appropriate at this point to indicate some of the salient features attendant to an analysis of this important asset.

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1. Does the certificate of the auditors give an unqualified statement as to the accuracy of the inventory account?

2. Is the inventory followed by the dangerous phrase, "as determined by the management," which to a marked degree relieves the auditors of responsibility?

3. Is "cost or market" evaluation sufficient in every case?

4. What are the important natural and political economic factors that surround the industry or trade at the time of analysis?

5. How many times yearly has the inventory been turned over into a more liquid asset, and does it compare favorably with competitors' turnovers?

6. Is the inventory out of line with prior years, considering the volume of business?

7. Has there been any style change in the industry which might render finished inventory obsolete?

8. Is the corporation one which deals in forward sales contracts which may have a serious effect upon the future profits?

9. Does the corporation deal largely by "consignments" of finished products which may be subjected to a careless custody and reduction in value?

10. Is the commodity handled one that is readily adaptable to rigid "perpetual inventory" control?

It will thus be readily observed from the foregoing that it is incumbent upon the analyst to consider many phases and facts surrounding the inventories in order to form an opinion which can be considered sound.

The inventory asset is one that affects not only the balance sheet but the profit and loss account, and it is for this reason that the figures appearing in the present and prior balance sheets are only a part of the story, and a study beyond this is necessary to obtain a correct appraisal of the situation.

Many of the questions suggested above with reference to the inventory item are obvious and need not be discussed in detail;

only those which present unusual characteristics or those subject to mathematical computation need be considered.

Cost or Market.—The valuation of "cost or market," whichever is the lower, is a principle adhered to by 80% to 90% of corporations in valuing their inventories. The matter for the analyst to consider, if the facts are available, is to determine what is the proper cost or market purchase price prevailing at the date of the balance sheet. It is not considered to be within the scope of this volume to discuss the methods of satisfying this question, and the analyst is referred to an excellent summary of inventory valuation and control appearing in the Accountants' Handbook.

However, it may be appropriate to consider two outstanding cases of inventory valuation, wherein the principle of "cost or market whichever is lower" cannot be relied upon or where such a method of valuation has not been followed by the corporation. In one case large manufacturers for several years bought crude rubber at around 40 cents per pound with the restriction policy of England hanging over their heads. These corporations valued their crude rubber on hand at that time at cost or market whichever was lower, and may be regarded as having been quite within sound practice. Nevertheless, these companies suddenly found themselves confronted in 1928 with losses running into millions of dollars after the British restriction was lifted and rubber had dropped to a market price of about 20 cents per pound. True, the corporations had in many cases created large inventory reserves but the discussion is meritorious, nevertheless, in pointing out the possible need for careful study.

Frequently a reserve for the fluctuation in value of inventory will be set up by the management in such cases where raw material or even finished goods inventory is subject to sharp declines in value. In such cases a reserve of this kind when clearly justified and so earmarked may be shown as a liability deduction against the inventory account. Unfortunately the American business man is rarely consistent in this respect. He may fail

to set up a reserve for such losses and ask the stockholders to excuse the poor showing at the end of the year on the ground that such losses were "beyond his control," while, on the other hand, he will take appreciation profit on inventory directly into the business as "operating profits."

The National Lead Company, on the other hand, has followed a policy of carrying their inventories at pre-war prices regardless of present prices, thereby creating a large hidden reserve and presenting a most conservative attitude. In such cases one cannot consider the balance sheet as a true picture of existing conditions.

Inventory Turnover.—A definition of turnover may be stated as the number of times capital invested in inventories or stocks on hand is reinvested in such inventories or stocks on hand during the financial period considered.

In computing the turnover in a retail business it is necessary to determine at first the average monthly inventory, or quarterly if the monthly figures are not available. This average inventory is then divided into the cost of the goods sold during the period under consideration. The answer obtained exhibits the average number of times the inventory is actually moved into a more liquid asset, i. e., cash or customers' accounts during that period.

The inventory of a manufacturing concern is usually made up of three distinct items: first, the raw materials used in the manufacture of the product; second, the goods in process which comprise raw materials used plus any labor and expenses incurred up to the date of taking inventory;[1] third, the finished goods which are the final or finished products on hand ready for sale, comparable to the inventory in a retail business less the profit that is added in selling to the retailer.

As the principle in computing the turnover in a manufacturing concern does not differ materially from that of the retail business, only the formula covering the three stages of inventory to be used is presented, which is self-evident.

[1] It should be borne in mind that goods in process are as yet not the finished product but represent only the cost of the stage in manufacture through which they have passed at the date of the financial statement.

$$\text{(1) Raw material turnover} = \frac{\text{Amount of goods going into process during period}}{\text{Average inventory during period}}$$

$$\text{(2) Goods in process turnover} = \frac{\text{Amount of goods in process transferred to finished product}}{\text{Average inventory of goods in process during period}}$$

$$\text{(3) Finished goods turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory for the period}}$$

In conclusion, therefore, it is quite apparent that the inventory of a corporation is in effect reappraised at the end of each financial period. Because of the ease with which federal tax evasion is often carried out by a juggling of this appraisal, and further, the desire in many cases to misinform the shareholders or prospective purchasers of a business, it is important that the analyst be most exacting in formulating his opinions of this asset.

Total Current Assets.—With the foregoing discussion of the current assets, it is important to consider carefully the total current assets from the standpoint of distribution as well as total amount. A thorough analysis of the individual items must be made before a correct appraisal of the current position of a company can be obtained. Many of the observations and questions indicated up to this point are made automatically by the experienced banker or credit analyst as he rapidly scans the statement for purposes of a Preliminary Analysis. In a Complete Analysis it is not uncommon for a staff of accountants and experts to spend several weeks in a detailed examination of receivables and inventory preparatory to the development of a comprehensive plan of financing or a proposed reorganization.

Current Liabilities.—Valuations are not of such importance when liabilities are involved and the main problem is one of classification. Liabilities are customarily regarded as current if they

are liquidated or mature within the period represented by the usual cycle of the company's operations.

Current liability classification would, therefore, include such items as notes and accounts payable, acceptances, dividends and accrued interest payable, etc. It is important to bear in mind that a large portion of the principal amount of funded debt might become a current liability, especially in the case of serial bonds, purchase money mortgages and other forms of short-term funded debt.

Notes Payable.—Many bankers and accountants consider this the most important item among the current liabilities. These notes should be classified into those due, those not due, and those past due. For the business man to list past due notes with those not due, without properly classifying them as such, is to pursue a very poor financial policy. It is for this reason mainly that the sound and conservative business man and accountant will list under "Past Due" all these "aged" notes.

To Banks. This item is closely linked up with the bank loan or bank credit line enjoyed by the business man. This enables one to determine what percentage of borrowings to total bank lines has been utilized in the past, to what extent the company is now using its bank lines and what margin of safety exists in the cash and liquid position of the company. Loans payable to bankers and others in note form should never be listed on the balance sheets as "Loans or Notes Payable." Such procedure is poor accounting and financial policy, for it not only leads one into a "blind alley," but when a banker analyzes such an item, he will require it to be broken down into its various component parts and the necessary explanations must follow.

To Trade. This account is one of the best indications of the financial condition of a company. It consists of unpaid promissory trade notes or drafts not due. Such notes (or bills payable as they are sometimes called) are legitimate only in certain trades

or industries where custom and procedure has sanctioned their use in place of the open account. In some businesses the appearance of notes payable for merchandise is an indication of a shortage of working capital. All notes payable appearing on a balance sheet should have the following information ready for reference: date, creditor, date due, interest rate, amount, accrued interest to date, whether original or renewal, collateral security, if any, and indorsers.

Commercial Paper. All notes in the form of commercial paper sold through brokers should be listed separately, and if secured, should be so noted on balance sheet as to security. Commercial paper notes should not ordinarily exceed the total bank credit lines. If they do, it is generally an indication of an unhealthy condition. Ordinarily, it should be so arranged with bank lines that one can liquidate the other.

For Equipment. These are sometimes referred to as purchase money notes, and represent secured promissory notes frequently given together with a cash consideration, for original or additional equipment in cases of expansion. These notes, when falling due serially and currently, are current liabilities, and if such purchase money notes are out of proportion to the company's immediate capacity to pay, it may cause embarrassment.

To Officers, Stockholders, and Employees. This item covers unpaid debts to the various parties mentioned and when appearing in large amounts suggests a condition of lack of working capital. The reason for this is that ordinarily a company pays its officers, stockholders, or employees in cash and failure to do so is not a healthy sign. It sometimes indicates a condition of poor management and the larger the amount due on such notes, the more skeptical will the analyst become.

Accounts Payable.—All accounts payable should be stated in the balance sheet so that the amount due each class of creditors

may be ascertained. Usually accounts payable are classified as "open accounts not due" and "open accounts past due."

Open accounts not due generally represent all unpaid bills for merchandise, materials, and supplies, and for other articles purchased for sale, either in their present state, for manufacture, or for general use in the business. These bills, although entered on the company's books, are not due at the time the statement in question was prepared. It is by this means that the analyst obtains an accurate check on the promptness with which a company pays its bills, by a comparison of the ratio of turnover of cost of goods sold to the average amount of notes and accounts payable outstanding. For example, if a company's terms of purchase are short and it owes for several months of purchase of supplies, it is a clear sign of a slow-paying business or a lack of adequate working capital.

Much dispute has arisen as to the proper treatment of federal income taxes. The exact amount of federal taxes is difficult to determine in advance of the actual preparation of the returns. Thus reserves are frequently set up to cover an estimated amount. In such cases the estimated amount for that year should be placed in the current liability section of the statement as a reserve for taxes. In the event that more taxes must be paid than provided for by the reserve, the additional payment will be regarded as a current expense of the period to which that tax applies. However, it may be treated as a charge to surplus.

Summary.—In addition to those liabilities enumerated, this may include such items as legal expenses falling due in the current period, franchise expenses, reserves for dividends declared and payable, etc.

Many times a company will attempt to "camouflage" or "window dress" their financial statements. Among the methods used are the over-statement of inventories, omission of contingent liabilities, anticipation of discounts on receivables as well as "a padding of receivables" by failure to take account of bad debts,

write-ups of property values, improper classification of debt, as well as many others which range all the way from "oversights" to fraud. This is frequently done with a view to confusing the analyst or investor interested in the statement. But to a keen observer such tactics are easily detected.

Net Current Assets or Working Capital.—Having properly evaluated and classified the current assets and current liabilities, it is possible to obtain by deduction a net current asset amount which is generally regarded as the amount of working capital invested in the business. While this figure in the past has been erroneously regarded as adequate if representing a ratio of 2 to 1 of current assets to current liabilities, the limitations of such an arbitrary ratio are evident. The question of ratios will be considered in further detail in Chapter VI, devoted to the discussion of that subject. The net current asset figure when developed over a period of time on a comparative basis is of very real importance to the banker and analyst, as it represents the margin of protection offered by the business man and corporation to its immediate creditors.

CHAPTER IV

THE BALANCE SHEET ANALYSIS (Continued)

The analyst may now properly turn to a consideration of the fixed tangible assets. When shown at their net figure the fixed tangible assets may be added to the net current assets in order to obtain the true net tangible asset value of the enterprise. This latter figure may be regarded as the true net worth of the business in cases when considerable doubt exists as to the valuation of goodwill and other intangibles, or in cases where serious conditions of over-capitalization are suspected.

Fixed Tangible Assets.—This group includes those assets used for carrying on the business and which are not bought for the purpose of manufacture and resale. A certain amount of fixed or permanent capital must be invested in the physical business plant. Furniture and fixtures, delivery equipment, land, buildings, tools, machinery, etc., must be purchased before the business can start its operations.

Land and Real Estate.—Due to the fact that real property may be over-valued, it is important that all real estate transactions entered on the balance sheet should be carefully scrutinized by the banker, business man, and investor. The type of business must be considered when appraising real estate in its relationship to investment credit. Land is ordinarily considered a fixed asset, although under certain circumstances it may be considered a current asset. A factory site is a fixed asset for a manufacturing concern, whereas for a real estate development company, it might be considered inventory, and in this sense a current asset. Thus, too, a machine or productive unit is considered a fixed asset in a manufacturing concern, whereas a company manufacturing the

same piece of machinery considers its product a current asset. The purpose of capital, therefore, as reflected in assets, is the principal test of whether that asset is current or fixed. Each fixed asset account, except land, should be offset by a valuation account representing either depreciation, depletion, or amortization to date. Land should be valued at the acquisition cost to a going concern, and, in the case of the extractive industries, it is subject to charges for depletion or loss in value due to consumption of the capital asset itself.

Buildings.—Buildings should be recorded at their cost. Such valuations should at all times be substantiated by documentary evidence.

Some authorities claim that a plant's valuation should be influenced by its indispensability to the profitable conduct of the business. Therefore, land, buildings and equipment which might bring very little at a forced sale, would be valued at a much higher figure when owned and managed by a capable owner or borrower. It is largely on this basis that appraised values are used and accepted.

Buildings lessen in value each year due to wear, tear, and the action of the elements, and provision must be made for this reduction in values. This is done preferably by means of a valuation account, which preserves the original cost value upon the books of the company and shows the shrinkage in that value in a separate account. The depreciation account reflecting this loss in value is as basically important as a loss on bad debts which reflects the shrinkage in value of accounts receivable. Rates of depreciation vary widely and the nature of the structure, location, kind of occupancy, etc., are vital factors to be considered.

One of the most striking statements regarding American industrials is that made by Laurence H. Sloan of the Standard Statistics Company, to the effect that there is no uniform policy respecting depreciation in American industry. Out of the 545 concerns studied it has been possible to obtain depreciation and

depletion data from 219, or only about 2 out of every 5. Two interesting illustrations are reported as follows:[1]

"Depreciation charges of Corporation A (an actual corporation) in 1927 amounted to 17.7% of property value. This was far above the average. The company's reported earnings available for its common stock amounted to around $7.60 per share. Had Corporation A's depreciation charges in 1927 been only equal to the average for our representative group of reporting concerns, the earnings shown for its common stock would have been well in excess of $9 per share.

"At the other extreme is Corporation B, the 1927 depreciation charges of which amounted to less than one-half of 1% of property value. This concern showed better than $5.25 per share of common stock. If its depreciation charges had been equal to the average, it would have reported a deficit for its common stock for that year."

With regard to the effect upon the investor, the Standard Statistics Company makes the following statement:

"Concealed assets or over-valued assets, concealed earning power or over-stated earning power, do not ordinarily accrue to the benefit of the average stockholder; they accrue to the benefit of those relatively few persons who have knowledge of the concealment, and who, either consciously or unconsciously, profit at the expense of those who are without this knowledge."

As a result of this outstanding study by the Standard Statistics Company, it is possible to lay down a reasonably accurate rate of depreciation for extractive and manufacturing American industrial companies. These standard figures are commented on as follows:

"The data for the 61 extractive concerns combined, however, appear to offer reasonably good measuring sticks for the years 1926 and 1927. Properties which were operated on a low production schedule in these years would, of course, have been

[1] Summarized from Chapter IV, "Depreciation and Depletion," Corporation Profits, by Laurence H. Sloan, Managing Editor, Standard Statistics Company, Inc.

justified in charging less to depletion and vice versa. But by and large, if we say that on the average typical concerns in the extractive industries charged somewhere around 4¾% to 5% of property value to depreciation and depletion in 1926 and 1927, we probably will have established a fairly workable standard against which to judge radical variations from an average situation."

A conservative organization will always set up a reserve for depreciation and depletion, whereas some concerns will not regard setting up such precautionary accounts as important. The result is always in favor of the conservative and far-seeing company, and such action is a clear indication of the conservative financial policy of the company in question.

Machinery and Equipment.—Machinery includes such items as lathes, drill presses, grinders, etc. The conservative manufacturer sets up a proper and liberal depreciation for each machine separately and so protects the financial condition and credit of his company. As a result, when the machine is worn out it may be replaced out of reinvested earnings, or else the company's credit permits the borrowing of such necessary funds. Past records have indicated that second-hand machinery and equipment when sold under forced sale usually bring only a negligible amount of their original value.

Furniture and Fixtures.—This item is descriptive of assets of ordinary use needed by the company either to display its merchandise, afford convenience to its customers, workmen, and office force, or to create and preserve records of the company. Usually this item includes desks, office machinery such as typewriters, adding machines, racks, shelves, tables, chairs, etc.

Needless to say, this item should be valued at cost, less a proper deduction for depreciation. An "appraised value" of such an asset would be regarded with suspicion.

Delivery Equipment.—This account includes items which

are generally subject to more rapid depreciation than other fixed assets. Such an account includes automobiles, carts, wagons, trucks, and other mobile equipment. In some larger concerns private railroad equipment, such as locomotives, freight cars, and other railroad equipment, are also included in this account. It is not uncommon for depreciation rates on this class of fixed assets to range from 10% to 100% per annum.

Non-Operating Property (Tenements, Club Buildings, etc.).—This item may include tenements owned and operated by the company for the benefit of its employees. Such an account, although it may sometimes bring in revenue, should be regarded as non-operating income, in order not to confuse it with the company's earnings. This account should be depreciated along with the other fixed assets of the company.

Investments in and Advances to Affiliated and Subsidiary Companies.—This account, for purposes of sound analysis, should be isolated on the statement. Many companies use their excess earnings for such investments. These investments should be properly indicated on the balance sheet, and reserves may be set up for a possible loss in value. The analyst or investor looking this item over will carefully consider it when viewing the balance sheet, for such investments and advances should reflect the true state of conditions. In the event the company receiving the advance is in a period of decline, it becomes of special importance to the analyst to determine the exact status of this account.

Intangible Assets.—One of the most perplexing groups of items appearing in the balance sheet of an industrial is that of intangible assets. Intangibles should really represent what their name implies—something of an indefinite value, but which, nevertheless, may have substantial value. The name of Wanamaker's or any other nationally known company or product lends itself very justly to intangible valuation. The following are some of

the more common intangible assets which may be discussed briefly.

Trademarks, Brands, and Patents. These items have a value of which it is difficult to form an accurate opinion. Analysts become suspicious when they appear heavily valued in the balance sheet. While the intangible items often contribute substantially to the success of a company, still the dictates of conservative policies point toward recording them on the balance sheet at a nominal figure. A basis for the valuation of intangibles will be found in Chapter VII.

Goodwill. Bankers, analysts, and investors are generally of the opinion that goodwill should be ordinarily listed at a nominal figure, and be charged off as rapidly as possible. The impropriety of stressing goodwill on the balance sheet, unless paid for by purchase, is established and rests upon sound business principles. Hence if one sees goodwill carried at an excessive figure, he should probe into it and determine if it is justified in terms of earning power. Obviously, a company manufacturing Paris garters, Coca-Cola, or Baldwin locomotives would have an intangible item of goodwill which years of advertising and efficient manufacture have established, and which might be said to rest on realizable values. On the other hand, a new company which has spent very little on advertising and has a small business, is not justified in setting up this account at more than a nominal value. It is conservative practice to apply the sum of one dollar, and by so doing indicate to the analyst or investor that while goodwill has been claimed, there is no attempt to "cash in" on an intangible asset of problematical value.

Copyrights. Prints, labels, trademarks, etc., possess something of the nature of patents in that they are registered and afford a limited monopoly for a period of years. Copyrights ordinarily relate to the fine arts, while these other rights relate to articles of commerce. The following can be copyrighted: books,

magazines, pictures, catalogues, circulars, or any artistic or musical publication tending to delight, enlighten, or please. Whatever has been spent along the lines leading to this copyright may be trifling compared to the value this thing may bring, and it is, therefore, another problematical item as to value. A copyright is granted for 28 years and can be renewed for a like period for a nominal sum.

In all cases, ample reserves should be set up, where necessary, to cover the writing off of such values as is consistent with sound and conservative financial policy. In view of the absence of a uniform policy, the authors make no attempt in this brief synopsis to lay down any set rules governing such procedure. It is of interest, however, to mention the Radio Corporation and the General Electric Company as examples of ultra-conservative treatment of patents and other intangibles, which are carried at nominal figures.

Deferred Charges.—Although accounting practice frequently provides for the classification of certain prepaid items, such as life insurance, prepaid advertising, and the like, conservative financial policies demand special accounting treatment of these so-called assets. Their value in liquidation or even realizable cash value is of a doubtful nature, and in addition they generally do not represent tangible asset material. They must be regarded as merely facilitating items in the form of a deferred charge or prepaid expense. Generally the amounts representing deferred charges or prepaid expense are relatively small in proportion to the total assets and are of minor importance to the analyst.

When a company sells its securities at a sum less than their par value, the difference between the cash received and the par of the stocks or bonds represents an expense to the company. The expenses of such financing are not an operating loss, but a capital charge to be amortized over subsequent periods, and should not be treated as current operating expense. Frequently in industrial companies it is charged off immediately in its entirety

against accumulated profit and loss surplus of prior years and thus does not appear on the balance sheet as a deferred charge or organization expense to be amortized out of future earnings.

Fixed Liabilities and Funded Debt.—Following a discussion of the more common current, fixed, tangible, and intangible assets as well as the more familiar current liabilities, it is important at this point to consider the fixed liabilities and funded debt.

Most fixed or long-term liabilities in the case of industrials take the form of funded debt under which may be classed, for purposes of convenient analysis, purchase money mortgages, first mortgage and debenture bond issues, serial note issues, and all other items representing actual liabilities to outside creditors. Too much emphasis cannot be placed at this point upon the importance of distinguishing clearly between such actual liabilities on the part of the enterprise to creditors and bondholders and those representing liabilities to owners, or stockholders. Further careful distinction must be drawn between surplus in its various forms and the various classes of reserves with respect to their classification as liabilities.

The line of demarcation between a current and fixed liability is frequently difficult to determine. Thus in the case of serial note issues it is important to consider as a current liability the serial amounts of such a fixed liability as may mature in the course of the current year or business period under analytical consideration. Such portions of serial indebtedness are frequently overlooked, which if properly considered would have an important if not serious effect upon the working capital and cash positions of the business. Chattel mortgages on machinery and equipment, as well as purchase money mortgages, are also subject to analysis as to amounts, maturity dates, manner of payment of interest and principal, etc., before they can be properly identified as fixed or long-term liabilities.

Funded debt may be classed in two broad divisions, secured and unsecured. The type of secured funded debt generally appearing in the industrial field is that represented by the general

corporate mortgage bond issue with a closed end indenture. Such a bond issue provides for a fixed amount of debt secured by the corporation's entire present and future fixed assets in the form of plant and property as well as by its current assets. When based on conservative asset values and protected by an adequate margin of earnings for interest requirements, such an issue frequently represents an attractive investment. This is often particularly true because of the speculative opportunities open to the investor in the form of conversion or warrant privileges, which provide a claim on the common stock and future earning power, in addition to adequate security.

The unsecured form of long-term or fixed liability is best represented by the debenture bond or note issue and ranks only as a general unsecured obligation. Such a type of issue is analyzed in Chapter X on Limited Analysis in the form of the Belding-Heminway Company 6% convertible gold notes and emphasizes the importance of earning power as the only sound basis of security of both income and principal to the investor.

Just as a reserve for bad debts is a legitimate deduction against accounts receivable and a reserve for depreciation against the fixed asset of plant and property, so may a specific form of fixed liability, such as a purchase money mortgage, or a chattel mortgage against machinery, be considered a deduction against the asset on which it is a lien in order to determine the net value of that asset. In the case of a general first mortgage bond, it is necessary to carry such an obligation against the net tangible assets, while in the case of a debenture or unsecured bond, the deduction must be made against the total net assets before true net worth can be determined.

Reserves frequently indicated as fixed liabilities in the balance sheet also bear a most important part in the determination of security values. Valuation reserves such as those for depreciation and bad debts, especially those representing merely segregations of surplus, such as "Reserves for Working Capital," "Contingencies," and "Miscellaneous or General Reserves," de-

note points in the balance sheet at which excessive hidden values may be created for stock ownership. Consequently, the analyst and investor should regard, in the absence of accurate information to the contrary, all apparently excessive valuation reserves and especially "Miscellaneous" or "General Reserves," as merely a part of surplus and available to proprietorship or net worth.

The Balance Sheet in Analytical Equation Form.—Having discussed the accounting and financial significance of the more important asset and liability accounts in the industrial balance sheet, it is appropriate at this point to develop a satisfactory analytical form for balance sheet analysis.

In view of the lack of uniformity of accounting procedure in industrial enterprises in contrast to that prevailing in the field of banks, railroads, and public utilities, it is practically impossible to determine the true book value or net worth of industrial securities by means of the usual method of adding capital stock and surplus and dividing by the outstanding number of shares. It is especially true in cases of such computations that the various reserves, as previously outlined, play an important part in determining the true value of any industrial enterprise and its securities. For this reason there has been developed a form of analytical balance sheet set-up which makes possible the arrangement of assets, liabilities, and reserves in such a way as to evaluate conveniently the industrial balance sheet in terms of true net worth and security for outstanding fixed liabilities and funded debt. This analytical form can be reduced to the formula:

(1) Current assets — Current liabilities = Net current assets or Working capital

(2) Net current assets or Working capital + Fixed tangible assets = Net tangible assets or Net invested capital

(3) Net tangible assets or Net invested capital + Intangible assets = Total net assets or Net worth

(4) Total net assets or Net worth = Net worth as represented by Capital and surplus or Proprietorship

A more complete elaboration of this formula will be found in Figure 7, where all of the more common balance sheet accounts appearing in the usual industrial statement will be found properly classified from the financial as well as the accounting point of view. In addition, appearing directly below the various groups of current assets, fixed tangible assets, and intangible assets, there will be found the various proper liability and reserve deductions which should be made against the corresponding assets appearing directly above in order that the analyst may finally arrive at a true net worth or net asset evaluation of the enterprise under consideration.

With this chart as a guide and with a fair knowledge of accounting, the analyst or even the average investor can readily convert the balance sheet into a more convenient analytical form from which conclusions as to its soundness can be more accurately drawn.

At various points throughout this volume in the analysis of specific cases, use has been made of this form of balance sheet analysis, and the advantages to be derived appear from experience to far outweigh the added time and accounting knowledge which is necessary to recast the balance sheet into this analytical form.

Advantages of the Balance Sheet in Equation Form.— Among the more important advantages of this method are the following:

1. A verification of the balance sheet figures is automatically obtained in that the final amount of total net assets or net worth must check with the net worth as represented by proprietorship or capital stock and surplus. If the two figures do not check, either the analyst has made an error or else the balance sheet accounts are incorrect. Strange as it may seem, more than one mistake has been found in the statements of some of the large companies by means of this method. Generally these are printers' errors, although occasionally an actual accounting error has crept in.

CURRENT ASSETS	*LESS* CURRENT LIABILITIES		*ADD* FIXED TANGIBLE ASSETS		*ADD* INTANGIBLE ASSETS AND DEFERRED CHARGES		REPRESENTED BY
Cash on Hand Cash in Bank Demand and Time Deposits Certificates of Deposits Marketable and Gov't Securities Notes Receivable Accounts Receivable Trade and Bank Acceptances *Inventories:* Raw Materials Work in Process Finished Goods Materials and Supp. Purchases for Resale Accrued Int. Receivable Current Advances on acct. of affiliated and subsidiary co.'s Accounts Rec. due from Officers, Employees, or Stockholders (Strictly current and liquid)	Notes Payable (To Bank) Notes Payable (To Trade) Accts. Payable (Trade) Acceptances Payable Notes Payable (Comm. Paper) Notes Tendered for Plant and Equipment Notes Payable — Officers, Stockholders, Employees, etc. Dividends Payable Accrued Interest Payable Notes and Accts. Discounted, sold, or assigned (per contra) Interest Payable Serial Note Interest or Mortgage Principal Payable Accrued Wages, Taxes, Rent, Interest, Insurance, Commissions, etc. Reserve for Federal Taxes	EQUALS NET CURRENT ASSETS OR WORKING CAPITAL	Land Real Estate Buildings Machinery and Equipment Furniture and Fixtures Non-operating Property (Tenements, Clubs, etc.) Tools Transp and Delivery Equip Investments and Long-Term advances in and to affiliated and subsidiary Co.'s Patterns and Drawings Notes given by Officers Drawings, Patterns Railroads (Factory) and Equip. Miscellaneous Equipment Investments (for income and control)	EQUALS TOTAL TANGIBLE ASSETS OR NET WORTH (EXCLUDING INTANGIBLES AND DEFERRED CHARGES) OR NET INVESTED CAPITAL	Leases Patents Trademarks Copyrights Goodwill Organization Expense Water Rights Franchises Deferred Charges (a) Prepaid Ins. (b) Prepaid Adv'g (c) Other Expenses (d) Disc. on Stocks and Bonds sold (e) Claims (f) Advances	EQUALS TOTAL NET ASSETS OR NET WORTH INCLUDING INTANGIBLES	Capital Stock Preferred and Common Capital Stock and Surplus Capital Surplus Profit and Loss Earned Surplus Premium on Stocks and Bonds sold (Part of Capital Surplus) Misc. Surplus Reserves (Hidden Proprietorship) Reserves for Working Capital Reserves for "Contingencies" "Miscellaneous" and "General" Reserves
RESERVES AGAINST ABOVE ASSETS AND LIABILITY DEDUCTIONS							
RESERVES FOR Notes Receivable Bad Debts (Accts. Rec.) Fluctuations in Inventories Unearned Discounts Freights and Allowances Interest Loss Foreign Deposits Receivables, sold or assigned (Contingent Liability treated as a Liability Deduction)			RESERVES FOR Depreciation of Fixed Assets Depreciation and Write-off of Patterns and Drawings Fluctuation in value of Investments Mortgage Liabilities and Purchase Mortgages, against specific assets		Secured Long-Term Liabilities and Funded Debt less Sinking Fund Assets and Funded Reserves General Unsecured Long-Time Liabilities (Debenture Bonds and Notes) Reserves and Write-offs on All Intangible Assets		Treasury Stock Deficits

Figure 7. The Balance Sheet in Analytical Equation Form

2. A complete analysis of both the working capital and the fixed capital positions of the company is conveniently obtained. This is highly desirable in view of the close relationship between these two items in security analysis.

3. The equities for funded debt and the tangible and intangible book value of the company's stock are readily obtained. The spread between the book values including and excluding intangible assets, helps materially in measuring the value of the company's goodwill and intangible assets. In the case of the Belding-Heminway convertible 6% gold notes mentioned in Chapter X, it will be found that in 1927 there were $13,047,614 of total net assets for $3,600,000 of notes, or $3,624 per $1,000 of notes.

In connection with the spread in the book values of the stock, it is of interest at this point to mention the significance of the percentage of net profit earned on invested capital including and excluding intangible assets. If, for example, a company earned 18% on its net invested capital or net tangible assets, excluding goodwill and intangibles, and only 3% on its total net assets or net worth, including intangibles, it will almost without exception indicate that the book value of the goodwill and other intangible assets is not justified. When such a condition is offset on the liability side of the balance sheet by common stock, an over-capitalized condition is the result. Further treatment of goodwill and over-capitalization will be found in Chapter VII, on the ratio analysis of financial statements.

4. Another important advantage lies in the ease with which one may determine the manner in which the capital of the business is represented by the various assets. When the total net assets or net worth is carried as 100%, it will be seen that physical properties net in the case of the Belding-Heminway Company in 1927 represented 26.89% of the net worth of the business. Such a method makes unnecessary the determination of such ratios as net worth to fixed assets, net worth to debt, etc., inasmuch as such

relationships are automatically obtained when the percentage of the various items to net worth is figured.

Total Net Tangible Assets or Net Worth Excluding or Including Intangible Assets.—By adding to the net current assets or working capital the fixed tangible assets net of all reserves, write-offs, and direct lien debt as indicated in Figure 7, it is possible to obtain an amount representing substantially the net invested capital in the enterprise. From this amount it is comparatively easy to determine a book value for common stock excluding goodwill or intangible assets as contrasted with the usual book value which is based on total net assets, which under certain circumstances may include intangible assets of highly doubtful value. Furthermore, such a method of analysis forces the analyst or investor to consider all reserves in the light of whether they are actual liability reserves, such as a reserve for taxes, or whether they may represent valuation or fictitious reserves in the form of excessive segregations of surplus and therefore available to the stockholders in the form of increased book value. Such increased book value may under certain circumstances precede a substantial stock dividend distribution.

In the case of secured funded liabilities, such as first mortgage bond issues as contrasted with general unsecured liabilities represented for example by debenture issues, it is difficult to determine exactly the point at which such liabilities should be deducted from the assets of the business in order to show the net proprietorship interest or common stock ownership in the enterprise.

First mortgage issues which represent only a claim on certain fixed assets may be shown as a liability deduction against those specific assets, as for example, the deduction of a reserve for depreciation against plant and equipment, thus showing that asset at its net figure. However, industrial corporate mortgages are usually general mortgages on all of the assets of the corporation, tangible as well as intangible and current as well as fixed. Con-

sequently, in the analytical set-up here discussed, it would appear reasonable and logical to deduct all funded debt secured and unsecured from the total net assets, thus arriving at a final net worth figure which must check with proprietorship or capital stock and surplus.

The importance of this figure representing total net tangible assets or net worth excluding intangible assets is emphasized at various points throughout this volume. It may be pointed out further, however, that one of the greatest values in the development of these two figures of net invested capital including and excluding intangible assets lies in the fact that one can obtain more accurately a basis for the evaluation of goodwill and intangibles as well as a more accurate "sell out" price or possible basis for consolidation or merger.

While the book value of stock may be figured more accurately, it will be realized that there is little if any relationship between book value and market value. Furthermore, it is appreciated that book value is of comparatively small importance in a going concern, although under conditions of possible liquidation it becomes a question of very real importance. Such a form of analytical arrangement clearly indicates the book values of the various securities of the enterprise under analysis.

Equity for outstanding debt is made conveniently available both on the basis of tangible as well as intangible values. Following the deduction of the secured and unsecured debt from the total net tangible assets excluding goodwill and intangible items, one readily obtains a true net invested capital figure upon which to base a tangible book value for the enterprise. Furthermore, when the deduction of the secured and unsecured debt is made from the total net asset figure, a comparative book value is readily obtained reflecting intangible as well as tangible values.

Capital Stock and Surplus.—The analyst of today is confronted with a difficult problem in determining true equity values

for a company's stock, particularly in the case of no par value issues from time to time. To this end profit and loss earned surplus should be properly segregated from capital surplus. Frequently, no declared value is carried in the annual reports for the no par value common stock. When capital and surplus are combined into one figure and represented by so many no-par common shares, no intelligent analysis of the proprietorship or net worth is possible without additional information.

Treasury stock, while frequently carried on the asset side of the balance sheet, is not a true asset but rather one of doubtful value both as to the manner in which it came into existence and its subsequent value at any given time. If donated to the corporation, its original value might be quite different from the value of stock purchased by the company in the open market. Again, if the company is highly successful and showing record earnings, its value is much greater than if the company is meeting with only mediocre success. Consequently, in the interests of conservatism, the balance sheet form as herein developed calls for the treatment of treasury stock as a deduction from the outstanding capital shares.

Many accountants prefer to carry a deficit on the asset side of the balance sheet, thus throwing the statement into balance. This practice appears from a financier's point of view as most inconsistent, and when such a deficit has occurred, it is properly a deduction from capital stock or net worth in that the capital has been impaired to that extent. On June 30, 1927, the American Agricultural Chemical Company showed a deficit on the asset side of the balance sheet of $18,760,660, which, when carried to the liability side as a deduction from common stock capital of $100 par shares of $33,322,126, indicated a net capital value, or roughly a net worth, of $14,561,466. Such a condition has in many cases been followed by a recapitalization plan in which the par value has been changed to no par. In this way the book deficit may be wiped out and efforts made to rehabilitate the enterprise.

Résumé.—The balance sheet of a business, which at best is a matter of opinion rather than of fact, is designed to show its financial condition at a given time. It marshals the assets in one list and the liabilities in another. The difference between the totals of the two gives the present net worth of the business. In compiling a balance sheet it is not sufficient to give simply the figures of net worth. Schedules of assets, liabilities, and proprietorship must be drawn up to show the present condition of the enterprise in its true light. Such a form, as has been outlined in this chapter, helps materially in reducing the balance sheet to a convenient analytical basis.

The proportion of assets to liabilities is almost as important information to an investor, purchaser, or banker as is the character of the assets and liabilities. If the assets are in properties for which there is not a ready market, and the liabilities are maturing claims which must soon be met, the situation is unfavorable. If there are large values invested in easily salable assets; if there is a large balance of cash on hand after meeting current claims and providing for those which will soon mature; if other liabilities are of a more permanent nature, such as mortgages or long-time notes not requiring immediate attention —the situation may show evidence of too large a capital or of inefficient management, as indicated by the failure to invest a part of the surplus cash in properties from which some return might be secured.

In drawing up a balance sheet, the form must be flexible enough to meet whatever requirements for information may be placed upon it. Thus, a balance sheet to be presented to the banker as the basis of a loan should be carefully classified so as to show clearly the financial condition, and sufficient detail should be given to indicate the basis used in valuation of the various items. A balance sheet drawn up for publication may, on the other hand, contain less detailed information and more attention must be given to its form. A balance sheet drawn up for use within the business itself may well contain very full information

and its form should be such as will actually portray the status of affairs. A balance sheet which shows on its face that cognizance is taken of uncollectible accounts and of the loss in fixed assets due to depreciation, is much more valuable as a financial statement than one lacking that information. Excepting for the general remark that regard must always be had to the purpose for which the balance sheet is drawn up, no hard-and-fast rule can be laid down in the matter of the relative fulness of detail.

CHAPTER V

PROFIT AND LOSS STATEMENT ANALYSIS

The analysis of the balance sheet, as indicated in the preceding chapters, is an important factor in industrial analysis from the standpoint of determining the financial status and book value of an enterprise at a particular date. The progress and results of the successful or unsuccessful management of an enterprise over a period of time must now be determined through an analysis of the profit and loss statement.

The technique of the analysis of a profit and loss statement is relatively simple compared with that of the balance sheet. The profit and loss statement, being a record of results and operations over a period of time, is a statement more of fact than of opinion. It is only necessary to obtain the report in sufficiently complete detail to determine with a high degree of accuracy the efficiency of management and the financial results of the enterprise under analysis. In other words, the profit and loss statement, when properly prepared, speaks largely for itself in its original form and the analyst does not have to resort to indirect analytical methods of a deductive nature in order to obtain the desired information from the statement.

Relation of the Profit and Loss Account to the Balance Sheet.—It is important that the analyst settle in his mind a number of very important but relatively simple questions of accounting before proceeding with the analysis of the profit and loss statement. Among these questions are those relating to the distinction between cash, profits, and surplus.

Many complex financial changes take place within a business enterprise every day of its life. Some of the changes are of a nature that directly affect the profit and loss account, while

others have only an indirect effect on this account but do have an immediate and important bearing upon the balance sheet. For example, assume an industrial company makes the sale of a large machine such as a lathe. The effect of this transaction is to increase sales and increase accounts receivable, which later when paid, increase cash. This transaction affected both balance sheet and profit and loss account. It presumably affected profit inasmuch as the lathe was sold at a price in excess of its cost of manufacture and sale. However, it is important to remember that while there may be a paper profit in the transaction, no cash has come out of the transaction nor has a profit been actually realized until the account receivable is liquidated. If there is an excessive delay in settling that particular account receivable, little or no profit may be realized, and further only a part of the original price may be received in cash with the balance in a note receivable which still remains to be liquidated.

Also within the balance sheet there can be changes which have no direct or immediate effect on the profit and loss account. For example, cash is paid to a trustee in charge of a sinking fund. No profit has arisen from the transaction and no revenue has been received or operating expense incurred and the entire transaction has affected only the asset side of the balance sheet. Thus it may be seen that many transactions may take place involving both the income account and balance sheet or either one separately without giving rise to a profit or only, on the other hand, affecting profit with no effect upon cash. An example of the latter situation would be an entry for provision for depreciation, which decreases profit but does not affect cash. Surplus is generally understood to represent accumulated profit. Thus, for example, a company may have a substantial surplus but may be extremely short of cash and working capital and in a position of acute financial embarrassment. The surplus may be entirely offset on the asset side of the balance sheet by property or other tangible assets, inventory which is out of style and cannot be sold, or even goodwill and other intangible assets. Therefore, surplus either cur-

The American Rolling Mill Company and Subsidiary Companies

CONSOLIDATED INCOME ACCOUNT

For the Year Ended December 31, 1928

Net Sales		$61,867,914.14
Cost of Products Sold (including $5,611,594.58 for maintenance and repairs, but not including depreciation)		49,812,577.86
Gross Profit before Depreciation		$12,055,336.28
Depreciation		2,491,869.90
Gross Profit		$ 9,563,466.38
Selling and Administrative Expenses		4,640,385.04
Profit from Operations		$ 4,923,081.34
Other Income:		
Interest and Dividends Earned and Sundry Other Income (net)	$1,262,016.65	
Profit on Sale of Oil and Gas Rights	2,785,917.77	4,047,934.42
Net Income before Interest and Federal Income Tax		$ 8,971,015.76
Deduct:		
Interest on Funded Debt	$1,430,110.41	
Other Interest	51,615.59	
Federal Income Tax	814,255.54	2,295,981.54
Net Income for the Year Carried to Consolidated Surplus Account		$ 6,675,034.22

Earned per Share of Common $5.657

Figure 8. Example of an Adequate and Well-Arranged

The American Rolling Mill Company and Subsidiary Companies

CONSOLIDATED SURPLUS ACCOUNT

For the year ended December 31, 1928

Balance, January 1, 1928:			
Companies consolidated in prior years	$12,789,160.80		
Companies not formerly consolidated	2,285,178.39	$15,074,339.19	
Less Stock dividend on common stock		1,425,030.00	$13,649,309.19
Add:			
Net income for the year per consolidated income account		6,675,034.22	
Premium on sales of common capital stock		8,156,250.00	
Revaluation of plant property		384,306.60	
Royalties applicable to prior years		20,644.98	
Adjustment of reserve for doubtful accounts		25,000.00	15,261,235.80
TOTAL			$28,910,544.99
Deduct:			
Cash Dividends:			
6% cumulative preferred stock		1,320.00	
7% cumulative preferred stock		199,568.17	
Common stock		2,342,444.50	
Call premiums on bonds, notes, and preferred stocks retired, and write-off of related unamortized discount and expense		1,709,796.83	
Loss on investment in the Ashland Steel Company		532,980.74	
Loss on disposals of plant property		290,817.10	
Prior years' federal taxes		12,932.42	
Loss on investment in the Norton Iron Works, Inc.		25,285.96	
Miscellaneous		39,756.32	5,154,902.04
Balance, December 31, 1928			$23,755,642.95

Income Account Appearing in an Annual Report

rently earned or accumulated seldom represents cash. Finally, surplus may not even be accumulated profit for it may be represented by capital surplus arising as a result of a revaluation process.

With the thought clearly in mind that the profit and loss statement is a record of the transactions which have taken place over a period of time and reflects the loss or gain to the owners of the business, it is appropriate at this point to examine in detail the construction of the profit and loss account.

Construction of the Profit and Loss Statement.—Contrary to the analytical method of treatment of the balance sheet, as has been outlined in Chapters III and IV, it is not generally necessary to rearrange the profit and loss statement. The principal difficulty is that of obtaining a full and complete statement of profit and loss. If the proper information is given and a full report published, little difficulty will be experienced in making a complete and satisfactory analysis of the statement.

An interesting example of the completeness with which a profit and loss statement can be issued is illustrated by the consolidated income account appearing in the annual report of the American Rolling Mill Company (Figure 8). In addition to this company, one need only consider the annual reports of the United States Steel Corporation and the General Motors Corporation as examples of adequate profit and loss account detail. These organizations report, for example, gross revenues in dollars as well as in tonnage and units produced, which are of great value and importance in industrial analysis. In direct contrast to this policy of keeping its stockholders fully informed, we have only to look at the statements of income and surplus appearing in the annual reports of Rolls-Royce of America, Inc., and Robert Reis and Company (Figure 9), and it is obvious that such statements of profit and loss are of little or no value, and entirely inadequate in reporting the information necessary for even a most limited analysis.

Rolls-Royce of America, Inc.

SURPLUS ACCOUNT

Debit Balance—January 1, 1926		$238,354.12
Deduct:		
Profit for the year 1926 *after* deducting Depreciation but before making charge for Bond Interest and providing for Federal Income Taxes	$737,885.65	
Less—Bond Interest	131,250.00	
	$606,635.65	
Less—Provision for Federal Income Taxes	82,000.00	
Net Profit for Year		524,635.65
		$286,281.53
Deduct—Preferred Stock Dividends Paid		61,250.00
Credit Balance—December 31, 1926		$225,031.53

Robert Reis and Company

CONSOLIDATED INCOME AND SURPLUS ACCOUNT

Manufacturing and merchandising gains on sales (based on valuing December 31, 1927, inventories at cost or market, whichever was lower) after deduction of depreciation of plant and all costs and expenses excepting interest	$217,270.16
Interest paid, net of interest received	16,917.60
Net income before federal income taxes	$200,352.56
Less, Provision for federal income taxes	8,750.00
Net addition to surplus for year 1927	$191,602.56
Surplus, January 1, 1927	574,324.11
	$765,926.67
Dividends paid during the year 1927 on first preferred stock	157,500.00
Surplus, December 31, 1927	$608,426.67

Figure 9. Examples of Inadequate Statements of Profit and Loss in Annual Reports

COMPARATIVE STATEMENT OF PROFIT AND LOSS

For Three Years Ending.....

	Year Ending—		
	19..	19..	19..
Gross sales	$	$	$
Less outward freight, allowances, and returns			
Net sales			
Inventory beginning of year			
Purchases, net			
Less inventory end of year			
Cost of sales			
Gross profit on sales			
Selling expenses (itemized to correspond with ledger accounts kept)			
Total selling expense			
General expenses (itemized to correspond with ledger accounts kept)			
Total general expense			
Administrative expenses (itemized to correspond with ledger accounts kept)			
Total administrative expense			
Total expenses			
Net profit on sales			
Other income:			
Income from investments			
Interest on notes receivable, etc.			
Gross income			
Deductions from income:			
Interest on bonded debt			
Interest on notes payable			
Total deductions			
Net income—profit and loss			
Add special credits to profit and loss			
Deduct special charges to profit and loss			
Profit and loss for period			
Surplus beginning of period			
Dividends paid			
Surplus ending of period			

Figure 10. Form of Income Statement Recommended by the Federal Reserve Board

An industrial analysis of a profit and loss statement as it should be reported is what the analyst is primarily concerned with. The arguments of officers and boards of directors in not publishing full information in their annual reports because of competitive conditions and the need for trade secrecy are appreciated by the authors. However, except in isolated and unusual cases, such arguments have little foundation and the last few years have seen the pendulum of financial policy in corporations swing in the opposite direction toward a policy of full and intelligent publicity to its stockholders.

Standard Forms of Statements of Profit and Loss.—As discussed in the chapters on balance sheet analysis, efforts have been made to standardize to some degree the form of a statement of profit and loss. The Federal Reserve Board has published a form which it is felt gives the necessary information for the basis of an intelligent analysis. This form (Figure 10), while representing a skeleton set-up, is so arranged as to be supported by additional schedules of itemized selling, general and administrative expenses. Cost of sales (cost of goods sold) must be broken down in order to analyze production costs.

The Boston Chamber of Commerce has striven to standardize profit and loss and income statement forms for industrials. As in the case of balance sheets, they have developed three interesting and very complete forms which lend themselves admirably to the three general divisions of industrial analysis as outlined in Chapter II—the Preliminary Analysis, the Complete Analysis, and the Limited Analysis.

For the requirements of the Preliminary Analysis, the form of statement of trading and profit and loss recommended by the Boston Chamber of Commerce (Figure 11) would readily afford the industrial analyst the basis for a limited study of the operating results of the enterprise. Chief among its disadvantages is the absence of reserves for depreciation and depletion and also the amounts expended for maintenance, which in a trading enterprise

Boston Chamber of Commerce Recommended Form

STATEMENT OF TRADING AND STATEMENT OF PROFIT AND LOSS

For the Year Ended.....

This is a summarized form showing appropriate divisions and classifications.

Item		Amount	Per Cent of Sales
SALES:			
Gross Sales (after corrections)		$1,000,000	
Less—Returns (5% of gross)		50,000	
Net Sales		950,000	100.0
*Deductions and Allowances		50,000	5.2
Net Sales		$900,000	94.8
*COST OF GOODS SOLD:			
By Inventory Method		700,000	73.7
Gross Profit on Sales		$200,000	21.1
*SELLING EXPENSE:			
Selling Expense		50,000	5.3
Trading Margin or Selling Profit		$150,000	15.8
*OTHER INCOME:			
Additions	$3,000		
Deductions	2,000		
Net Other Income		1,000	.1
Total Operating Margin		$151,000	15.9
*GENERAL EXPENSES:			
Administration and General Expenses		25,000	2.6
Net Profit before Adjustment and Taxes		$126,000	13.3
PROFIT AND LOSS (Direct):			
Inventory Adjustments	$ 1,000		.1
Misc. Reconciling Adjustments	2,000		.2
Idleness (at Idleness rates)	10,000		1.1
Total Adjustments		13,000	1.4
NET PROFIT BEFORE TAXES		$113,000	11.9
INCOME TAXES		15,000	1.6
NET PROFIT AFTER TAXES		$98,000	10.3

There would be supplementary schedules containing details supporting the items against which schedule references are indicated by an asterisk.

Figure 11. Form of Profit and Loss Statement Suitable for Preliminary Analysis

are of much less significance than in the manufacturing or extractive type of industrial. The most important divisions of sales, cost of goods sold, selling expenses, general and administrative expenses, together with adjustments, are indicated. Net sales are carried as they should be at 100%, and the other items are shown as their respective percentages of net sales. This vertical percentage method of analysis when used in conjunction with the horizontal trend percentage method completes the analysis. The development of these additional analytical measures will be covered in Chapter VI on comparative analysis.

When Complete Analysis is undertaken a more detailed schedule of profit and loss is necessary as a basis for the study of the past financial record and the future possibilities of the enterprise. A statement in sufficient detail is required by the business executive or professional engineering firm in order to determine whether manufacturing, selling, or general and administrative expenses are out of line and excessive. On the other hand, it may be found that the organization is hampered by excessive charges. Other income from subsidiaries upon which considerable dependence may have been placed in the past may now be cut off. In such cases the problem resolves itself into one of either liquidation or rehabilitation of subsidiaries. Again, it may be found that sales are steadily falling off for any one of many reasons. This might necessitate not only a complete change in sales policy but also the development of new and improved lines to replace the existing ones. As a basis for a Complete Analysis of these and many other questions a more complete profit and loss statement (Figure 12) is absolutely essential.

Frequently in analytical work, the profit and loss statements are not rendered to the investment banker, commercial banker, and investor in their detailed separate scheduled form, but are consolidated into one rather lengthy statement in which the more important details of the main classifications are indicated in the statement itself instead of on separate schedules. Consequently, it is this general profit and loss statement that is usually rendered

Boston Chamber of Commerce

STATEMENT OF INCOME
For the Year Ended

This statement differs in form from that in Figure 11 in that "Cost of Goods Sold" as well as details of the main classifications appear on the face of the statement and not upon subsidiary schedules.

INCOME FROM SALES:		
Gross Sales	$.....	
Less Returns	.....	
Net Sales	$.....	
DEDUCTIONS FROM SALES:		
Allowances to Customers:		
On Sales Price	$.....	
On Damaged Goods	.....	
Freight and Cartage Outward—on Sales	.....	
Stable and Automobile Expense (Proportion Applicable to Sales)	.....	
Total Deductions from Sales	$.....	
Income from Sales		$.....
COST OF GOODS SOLD:		
Manufacturing Cost of Goods Finished During the Period:		
Prime Cost:		
Materials and Supplies Consumed (including Freight and Cartage thereon)	$.....	
Productive Labor (direct)	.....	
Total Prime Cost	$.....	
Manufacturing Overhead:		
Superintendence	$.....	
Unproductive Labor	.....	
Heat, Light and Power	.....	
Factory Expense	.....	
Repairs and Maintenance, Machinery and Tools	.....	
Total Manufacturing Overhead	$.....	
General Factory Overhead:		
Salaries and Wages	$.....	
Shipping Material Consumed	.....	
Shipping Department Supplies	.....	
Miscellaneous Shipping Expense	.....	
Traveling Expenses—Shipping Department	.....	
Stationery and Printing Consumed by Factory	.....	
Total General Factory Overhead	$.....	
Total Manufacturing Cost for the Period	$.....	$.....

Figure 12a. Suggested Form of Profit

Recommended Form

AND PROFIT AND LOSS

December 31, 19__

Deduct: Increase of Inventory of Goods in Process as between Jan. 1 and Dec. 31	$.....	
Add: Decrease of Inventory of Goods in Process as between Jan. 1 and Dec. 31	.....	
Manufacturing Cost of Goods Finished during the Period	$.....	
Inventory Adjustment:		
Deduct: Increase of Inventory of Finished Goods as between Jan. 1 and Dec. 31, after deduction therefrom of the value of goods distributed free, and used by salesmen	$.....	
Add: Decrease of Inventory of Finished Goods as between Jan. 1 and Dec. 31, 1913, after deduction therefrom of the value of goods distributed free, and used by salesmen	.....	
Manufacturing Cost of Goods Sold	$.....	
Addition Cost—Freight, Handling and Warehousing of Raw Materials Consumed	$.....	
Total Cost of Goods Sold		.....
GROSS PROFIT ON SALES		$.....
SELLING EXPENSE:		
Salaries of Selling Management	$.....	
Salaries, Commissions, and Expenses of Salesmen	.....	
Advertising Expense	.....	
Free Goods	.....	
Traveling Expense of Sales Manager	.....	
Premiums	.....	
Stationery and Printing Consumed by Office of Sales Manager	.....	
Special Inducements to Jobbers	.....	
Salesmen's Samples used in Demonstration	.....	
Sundry Expense of Sales Office	.....	
Total Selling Expense		$.....
SELLING PROFIT		$.....

and Loss Statement for Complete Analysis

Boston Chamber of Commerce

STATEMENT OF INCOME
For the Year Ended

ADMINISTRATIVE AND GENERAL EXPENSES:		
Administrative:		
Office Salaries	$.....	
General Office Expenses and Supplies	.....	
Telephones and Telegrams	.....	
Legal Expense	.....	
Traveling Expenses of Administrative Officers	.....	
Postage Expense	.....	
Stationery and Printing—Office	.....	
Heat and Light—Office	.....	
Miscellaneous	.....	
Total Administrative	$.....	
General:		
Repairs and Maintenance of Office Buildings	$.....	
Experimental Expense—Processes and New Goods	.....	
Experimental Expense—Machinery	.....	
Total General	$.....	
Total Administrative and General Expense		$.....
PROFIT FROM OPERATIONS		$.....
ADDITIONS TO INCOME:		
Interest on Notes Receivable	$.....	
Sundry Sales of Materials and Empty Containers	.....	
Discounts Gained on Creditor's Accounts (Cash Discounts)	.....	
Interest on Bank Balances	.....	
Total Additions to Income	.....	.....
SUM OF PROFIT AND ADDITIONS		$.....
DEDUCTIONS FROM INCOME:		
Taxes, Licenses and Fees (exclusive of Real Estate Taxes)	$.....	
Fire Protection (not chargeable to Manufacturing or Administrative Expense)	.....	
Discounts Lost on Creditors' Accounts (Cash Discounts)	.....	
Interest and Discounts—Notes Payable	.....	
Collection Fees and other Bank Charges	.....	
Total Deductions from Income		$.....
GROSS PROFIT AND INCOME FROM OPERATING AND OTHER SOURCES		$.....

Figure 12b. Suggested Form of Profit and Loss

Recommended Form

AND PROFIT AND LOSS

December 31, 19__

EXTRAORDINARY LOSSES OF THE PERIOD:		
Frozen Goods	$.....	
Accounts Receivable—Uncollectible	.....	
Breakage of Carboys and other Empty Containers Returnable to Shippers	.....	
Total Extraordinary Losses of the Period		$.....
NET PROFIT FOR THE YEAR		$.....
RESERVED:		
For Depreciation of Physical Assets	$.....	
For Possible Losses of Accounts and Notes Receivable.	.....	
Total Reserved		$.....
PROFIT AND LOSS TO SURPLUS, DEC. 31		$.....
SURPLUS, JAN. 1, 1913	$.....	
Less—Adjustments during the Period:		
Returned Sales of prior periods, and Frozen Goods sold in prior periods, the profit on which figures in the surplus as established at....(date)....including freight and all expenses paid by the Company on such returns	.....	
Net Adjusted Surplus, January 1		.....
SURPLUS, DECEMBER 31		$.....

Statement for Complete Analysis (*Continued*)

to the outside party other than the business executive who has access to the complete set of detailed figures as indicated in Figure 12, under the "Cost of Goods Sold" section of the summarized profit and loss form of statement.

This general consolidated profit and loss statement, in which there are summarized the cost and expense data appearing in the separate schedules, is usually entirely adequate for all the ordinary analytical purposes of either a Preliminary or a Complete Analysis. In cases where a comprehensive reorganization of the internal management is decided upon and a system of budgetary control is set up with changes in the cost accounting system, it is necessary to have a complete breakdown of the profit and loss statement. This represents a very satisfactory guide form for reporting the operations of an industrial to bankers and others who are by virtue of close personal and financial contact legitimately entitled to a complete record of the company's progress.

Such a form is rarely if ever published in the annual reports or through the usual statistical sources, but at least the more important divisions should be made available to the public and investors for purposes of Limited Analysis. These are:

Gross sales
Deductions from Gross Sales
Net sales
Less: Cost of Goods Sold
Gross Profit on Sales
Less: Selling, General and Administrative Expense
Net Profit from Operations
Add: Other Income
Gross Income
Less: Other Charges including interest on funded debt, reserves for depreciation, taxes, etc.
Net Income Available for dividends
Less: Dividends
Net Income to Surplus
Surplus at beginning of period
Less: Extraordinary Charges and Adjustments
Surplus at end of Period per Balance Sheet

Even if only profit and loss information, such as the above, together with a balance sheet, were rendered to bankers and investors, it would be a relatively easy matter to determine with a fair degree of accuracy the financial progress of the enterprise and the value of the company's securities.

Interpretation of the Profit and Loss Statement—Sales.—Under normal circumstances gross sales, which is the first item on the profit and loss statement, should show an increase each year. Should gross sales fall off in any year, the analyst should immediately set out to find the reason for the decrease. Reduced gross sales may result from a reduced selling price of the article. Actually, the number of units produced and sold may have increased but the sale price of the unit may have been reduced. Another reason for reduced gross sales may be the fact that the particular company under consideration is suffering from an economic depression throughout the industry, in which case the factors causing reduced sales may be beyond the control of the management. When the analyst meets a situation of this nature, he should try to ascertain whether the depression in the industry is due to temporary factors, or whether it is caused by more permanent factors, such as radical changes in style and demand. A case illustrative of this point would be the transition of the formerly prosperous wagon and carriage building industries to the automobile industry.

Gross and Net Sales.—When the gross sales of one particular company fall off, while the sales of other companies in the same line of business are increasing, it generally means that the company with decreasing sales is poorly managed. Perhaps the sales organization is not as alert and as aggressive as it should be, or perhaps the company's product is not as well made or as reasonably priced as the product of other companies. Because of these and many other factors, an unfavorable showing may result.

Any returned goods are deducted from gross sales, giving net sales, which for purposes of analysis is used as 100%. All other items in the profit and loss statement are then figured as a percentage of net sales.

Cost of Goods Sold.—The next item on the profit and loss statement is cost of sales or cost of goods sold. This is one of the most important items in the statement inasmuch as it is this item which reflects most clearly the efficiency of the management. Whenever the analyst finds that the cost of goods sold is increasing out of proportion to the increase in sales, he should determine the reason for the increase. When the various items making up the cost of goods sold are itemized in complete detail as shown in Figure 12, the reasons for the increased cost can usually be ascertained within certain limits. Having determined the point at which costs appear to be out of line, it is then possible to subject the particular department or phase of the industrial process to a complete and detailed analysis. As a general rule an increase in cost of goods sold is due, more or less, to competition. The company, being small, may not be able to purchase its raw material on as favorable a basis as its larger competitors, or operating with less efficient plant and equipment cannot bring down costs to a point of competing advantage.

Selling Expense.—The next group of deductions is selling expenses. This is one of the most difficult items to analyze. During a certain period selling expense may have increased considerably without any corresponding increase in sales. At first sight it would appear that such an increase in selling expense was unwarranted. The answer to this objection may be that, had no additional money been spent on selling expense, advertising, etc., the sales would have decreased rather than maintained their former volume. Therefore, the additional selling expense was justified in that it prevented a further loss of business. Perhaps, on closer examination, it is found that excessive sales and advertising expense may be the basis of considerable "missionary"

work if a foundation is being laid for development of the business along entirely new lines. The justification of an increase in selling expense without a corresponding increase in sales is a special problem for the advertising or marketing expert rather than for the general analyst. Having determined that the point of difficulty lies in the distribution phase of the enterprise, the analyst, like the general practitioner in the field of medicine, should call upon the specialist.

Administrative and General Expense.—The next group of deductions on the profit and loss statement is that of administrative and general expense. If it is found that the expenses in this group are excessively high, a detailed analysis of each one of the accounts making up this group should be made. Such an analysis may reveal the fact that the officers, especially in a closed corporation, are paying themselves excessively large salaries in lieu of dividends on their stock. On the other hand it may be due to waste through inefficient administration. Subtracting administrative and general expense from gross profit on sales, there remains an operating profit or loss.

Other Income.—To profit or loss from operations are added additions to income, sometimes referred to as other income. In this group is included income received from sources outside of the actual operations of the business. Many large corporations show a substantial income from their investments. It is usually advisable to compare this item with the amount of the investments in the balance sheet with a view to determining whether the investments are under or over-valued. Since the balance sheet shows only the amount of the investments at the end of the period, while the profit and loss statement shows the income received from investments over the entire period of the statement, it is necessary to obtain a figure which will represent the average amount of the investments over that period. This is obtained roughly by taking the average of the amount of investments at

the end of the period and the amount of the investments at the end of the preceding period. The income from investments is then capitalized and the result compared with this average. If the result obtained by capitalizing income from investments is greater than the average amount of investments over the period, then it follows that the investments are under-valued, or conversely, if less, over-valued.

As an example of this method, assume that the X Corporation, in its profit and loss statement for the year ended December 31, 1927, shows "Income from Investments—$500,000." The balance sheet as of December 31, 1927, shows "Investments—$4,000,000," while the balance sheet as of December 31, 1926 shows "Investments—$3,500,000." Taking the average of $4,000,000 and $3,500,000 we get $3,750,000 as an assumed average investment over the period. The corporation, then, earned over 13% on its average investments. This immediately shows the value of the securities to be understated. By capitalizing the income from investments at say 6%, we get $8,333,333 as the value of the securities, which is the amount the corporation could probably receive for them should it attempt to dispose of them. It is important to bear in mind that a capitalization test is applicable only to the better grade of securities and may not apply to weak subsidiary equities.

There is no objection to the practice of carrying investments at cost, but the above plan is presented so that the analyst may determine the approximate value of the securities at the time of the analysis as compared with their original cost and thus disclose sources of hidden asset values in the corporation's own securities.

Deductions from Income.—The next item on the profit and loss statement represents deductions from income or other charges. Many corporations follow the rather poor practice of not showing deductions from income separately but of merely subtracting the deductions from the additions to income. The

net figure thus obtained is called either net deductions from income or net additions to income as the case may be, and frequently even the significant word "net" is omitted. This is poor practice from the point of view of the investor, as the statement is not nearly so informative and it precludes all possibility of the analyst determining the present value of the investments. The most important items appearing in this group, as deductions from income, are taxes and interest paid.

It will be noted in the statement in Figure 12, that deduction for depreciation appears as the last item on the statement before transferring profit to surplus. It is usually conceded that depreciation is an operating expense and should be included in the cost of goods sold. Where cost of goods sold is shown in one sum as a deduction from sale, it is usually advisable to show the amount of depreciation as a separate item directly following cost of goods sold.

Net Profit.—The net profit for the period is added to surplus, such adjustments as necessary being made to the surplus account. These adjustments usually include deductions for dividends paid and any entry applicable to a prior period, such as the payment of income taxes in one year upon a profit made in a previous year (when no reserve for taxes has been set up on the books).

The surplus account should be set up to show "earned surplus" and "other surplus," usually referred to as "capital surplus." In this way, it can be determined how much of the surplus actually resulted from the successful or unsuccessful operating efforts of the company, and how much came from financial operations such as from a revaluation of assets or a change from stock of par value to stock of no-par value, and the assigning of a smaller capital liability to the stock, crediting the difference to the surplus account.

Surplus, finally, should be reconciled to agree with the surplus appearing in the balance sheet, and if all deductions from net profit in the form of dividends and extraordinary charges or credits to surplus are properly indicated, the analyst or investor

is placed in a position of being able to determine clearly the financial results of operations.

Contrary to much of the accepted accounting practice, dividends should be indicated as a deduction from the *current year's* profits, as the investor is interested in whether it has been earned during the period for which it is paid. Many statements of profit and loss will show the profit for the period added to previous surplus, after which dividends, depreciation, and other charges are deducted. Upon closer examination, it may be found that the dividend was not earned for the period in which it was paid and that the major portion of the distribution was made from surplus. A substantial portion of the net profits in any enterprise should be reinvested and retained in the surplus account, and the form of the profit and loss account should clearly indicate this condition. Just how much should be reinvested becomes a matter of financial policy and this question together with others will be discussed at length in subsequent chapters on the comparative and ratio analysis of statements.

CHAPTER VI

COMPARATIVE STATEMENT ANALYSIS

The Balance Sheet

Comparative statement analysis may be divided into two broad divisions consisting of comparative balance sheet analysis on the one hand and comparative profit and loss statement analysis on the other. In any problem of industrial analysis both the balance sheet and profit and loss statement must be considered. In fact, it is only through a comparative analytical consideration of both statements that it is possible to draw correct conclusions.

Methods of Comparative Balance Sheet Analysis.—The problem of comparative balance sheet analysis resolves itself into four general methods:

1. The horizontal percentage trend method
2. The vertical percentage method
3. The "where got–where gone" method
4. The ratio method

The ratio method in recent years has been developed to a point where it is worthy of special consideration in a separate chapter and consequently it will not be discussed in detail at this point. It is of interest, however, to observe that comparative analysis by means of ratios has very definite limitations and great care must be exercised lest false conclusions be drawn from an arbitrary use of so-called "standard ratios." Furthermore, there is a strong tendency in the compilation of ratios to become so absorbed in the statistical aspects of such a compilation as to neglect and fail to recognize the fundamental underlying characteristics of the financial statement. The necessity for a constant revision of ratios to conform with changing economic conditions

is obvious and further attention will be given to the question of ratios in the next chapter.

The Horizontal Percentage Trend Method.[1]—For convenience, speed, and the requirements of a Preliminary Analysis, the trend method of comparative balance sheet analysis is ideally suitable. The primary objective in all statement analysis is to determine the strong and weak points with a view to making a more detailed follow-up analysis. It is remarkable how quickly one may discover the significant points by this method. Throughout this volume, a number of trend analyses have been made, which detect such weaknesses as over-investment in receivables, inventories, or fixed assets, insufficient profit, and other industrial ailments. Where the trend method of analysis is used under the proper circumstances, it is invaluable in detecting tendencies toward financial embarrassment frequently well in advance of their final culmination.

The trend method, to be accurate and effective, should be based on semi-annual or quarterly statements, and in addition should have as a base an ideal or balance sheet dollar statement. This ideal statement should represent as nearly as possible the normal business conditions affecting the enterprise and not, for example, such abnormal conditions as prevailed in 1921. The error, therefore, in comparing the balance sheet of 1928 or 1929 with that of 1921 on a horizontal percentage trend basis is self-evident.

It is recognized that there are definite limitations to this ideal state of affairs which is suggested as a basis for balance sheet analysis. First of all, it is difficult to obtain statements on a more frequent basis than annually or semi-annually. Second, there are limitations of time and labor preventing the economical construction of an ideal statement either on an annual or semi-annual or

[1] The horizontal percentage method of comparative analysis has been developed in an interesting and fairly complete manner by Stephen Gilman of Chicago, Illinois, in a recent book on "Analyzing Financial Statements," published by the Ronald Press Company. Certain refinements of this trend method as outlined are necessary. Such refinements are possible as a result of the changing policies on the part of industrial companies in recent years with respect to the more frequent publication of their financial statements.

quarterly basis. However, in recent years there have developed a number of trade associations, bureaus, and statistical sources which have sought to encourage the development of standard ratios and composite balance sheets and profit and loss accounts. Among the organizations which have accomplished a great deal in this direction are such bodies as the United Typothetae of America, the Standard Statistics Company Incorporated of New York, and the Bank Service Department of the National Credit Office. Other organizations such as the Robert Morris Associates are doing much to further the technique of comparative industrial statement analysis.

Forms of Analytical Set-Up in the Horizontal Trend Method.—The simplest method of comparative analysis under the horizontal trend method is that of the arbitrary selection of any year as a base of 100% and the comparison of all subsequent years as a percentage of the base selected. This is illustrated by the comparative analysis of the Congoleum-Nairn Co., Inc. (Figures 13 and 14) for the five years from 1923 to 1927, inclusive. This study readily indicates the outstanding points of industrial weakness in this enterprise, the most important of which is, without doubt, a heavy over-expansion of inventories and fixed assets. When the market for the company's product failed to develop in proportion to plant expansion and increasingly sharp competition set in, it is apparent that, in its over-expanded and over-capitalized condition, the prospect of satisfactory earnings per share became more or less remote. It is of interest at this point to quote from a recent study by the Standard Statistics Company as to the outlook for the company.

"Changes in management have taken place within the last two years with results apparent in the increased operating efficiency reflected by the 1927 report. The latter shows larger earnings than in 1926 despite further lowering of prices, while an improvement in the inventory situation has also been made in the development of new products designed to strengthen the competitive

Congoleum-Nairn, Incorporated

Balance Sheets—Years Ending December 31, 1923[1] to 1927

	Dec. 31, 1923	1923 Base Year	Dec. 31, 1924	1924 % of 1923	Dec. 31, 1925	1925 % of 1923	Dec. 31, 1926	1926 % of 1923	Dec. 31, 1927	1927 % of 1923
ASSETS										
CURRENT ASSETS:										
Cash	1,152,749	100	2,480,059	215.1	3,054,357	265.0	1,880,881	553.5	1,243,078	637.0
Money Loaned Through Banks	—		—		—		4,500,000		6,100,000	
Notes and Accounts Receivable —Less Reserve for Discounts and Doubtful Accounts	5,208,659	100	4,381,493	84.0	3,380,044	64.9	2,192,354	42.1	2,367,665	45.5
Inventories	3,413,259	100	7,762,517	227.4	8,479,096	248.4	6,218,190	182.2	6,997,444	205.0
Sundry Debtors	—		103,324		106,839		96,413		179,517	—
Advances to Salesmen, Etc.	32,947		—		—		—		—	—
Due from Affiliated Co. Current Accounts	2,605		—		—		—		—	—
Marketable Securities	—		70,037		322,081		[2]		[2]	—
TOTAL CURRENT ASSETS	9,810,219	100	14,797,430	151.0	15,342,417	156.4	14,887,838	146.0	16,887,704	172.1
FIXED ASSETS:										
Buildings and Equipment	[3]		[3]		20,280,100		[3]		20,908,544	
Land	[3]		[3]		1,100,359		[3]		1,056,507	
TOTAL FIXED ASSETS			21,200,333		21,380,459		21,276,360		21,965,051	
Less Reserve for Depreciation	[3]		5,633,632		6,328,674		7,206,964		8,158,432	
Land, Buildings and Equipment—Net	6,744,245	100	15,566,701	230.8	15,051,785	223.2	14,069,396	208.6	13,806,619	204.7
Construction in Progress	70,850	100	17,134	24.2	53,305	75.0	485,365	685.1	122,506	172.9
Goodwill and Trademarks	1,000,864	100	1,000,864	100.0	1,000,864	100.0	1,000,864	100.0	1,000,864	100.0
Investments in Affiliated Companies	282,783	100	1,839,877	650.6	700,586[2]	247.7	1,236,874[2]	437.3	1,236,874	437.3
Discount on Bonds	46,750	—	38,250	81.8	—	—	—	—	—	—
Prepaid Insurance and Advertising	176,900	100	215,288	121.7	180,309	101.9	164,847	93.2	109,920	62.1
Miscellaneous	146,772	100	110,045	75.0	68,435	46.6	22,330	15.2	3,695	2.5
TOTAL ASSETS	18,279,383	100	33,585,589	183.7	32,397,701	177.2	31,867,514	174.3	33,168,182	181.5

	Dec. 31, 1923	1923 Base Year	Dec. 31, 1924	1924 % of 1923	Dec. 31, 1925	1925 % of 1923	Dec. 31, 1926	1926 % of 1923	Dec. 31, 1927	1927 % of 1923
LIABILITIES										
CURRENT LIABILITIES:										
Accounts Payable and Accrued	745,202	100	811,269	108.9	926,681	124.4	780,954	104.8	758,670	101.8
Federal and State Income Taxes (Estimated)	675,000	100	887,000	131.4	425,000	63.0	170,928	25 3	252,516	37.4
Total Current Liabilities	1,420,202	100	1,698,269	119 6	1,351,681	95.2	951,882	67.0	1,011,186	71 2
First Preferred Stock	1,805,100	100	1,737,800	96.3	1,664,500	92.2	1,509,400	83.6	1,509,400	83 6
Common Stock	3,754,655	100	13,754,655	366.3	13,754,655	366.3	13,754,655	366.3	13,754,655	366 3
Funded Debt	2,885,300	100	2,672,855	92.6	2,460,411	85.3	1,873,300	64 9	1,773,300	61.5
Reserve for Contingencies	—		—		—		200,000	—	242,303	—
Other Reserves	—		—		—		144,626	—	491,925	—
SURPLUS:										
Created by Valuation of Goodwill and Trade-marks	1,000,000	100	1,000,000	100	1,000,000	100	1,000,000	100	1,000,000	100
Appropriated Surplus	23,300	100	73,300	314.6	123,300	529.2	173,300	743.8	223,300	958 4
Earned Surplus	7,390,826	100	12,648,710	171.1	12,043,254	162.9	12,260,351	165 9	13,162,113	178.1
TOTAL SURPLUS	8,414,126	100	13,722,010	163 1	13,166,554	156.5	13,433,651	159.7	14,385,413	171.0
TOTAL LIABILITIES	18,279,383	100	33,585,589	183.7	32,397,701	177.2	31,867,514	174.3	33,168,182	181.5

[1] 1923 Statement is for Congoleum Co., Inc. Subsequent statements give effect to consolidation of Congoleum Co., Inc. and Nairn Linoleum Co.
[2] Investments in affiliated companies include marketable securities. Not separately reported.
[3] Not reported.

Figure 13. Comparative Horizontal Trend Analysis of Balance Sheets

Congoleum-Nairn, Incorporated

PROFIT AND LOSS STATEMENTS—YEARS ENDING DECEMBER 31, 1923 TO 1927

	Year Ended Dec. 31, 1923	1923 Base Year	Dec. 31, 1924	1924 % of 1923	Dec. 31, 1925	1925 % of 1923	Dec. 31, 1926	1926 % of 1923	Dec. 31, 1927	1927 % of 1923
MANUFACTURING PROFIT	11,232,419	100	16,691,711	148 6	10,269,761	91.4	7,714,698	68.7	[1]	—
Deduct Depreciation	332,847	100	749,111	225.0	722,084	216.9	963,819	289.7	969,512	291.3
COST OF GOODS SOLD	10,899,572	100	15,942,600	146.3	9,547,677	87.6	6,750,879	61.9		—
Deduct: Selling Expenses	5,589,036	100	8,994,308	160.9	7,224,802	129.3	5,589,890	100.0	[1]	—
PROFIT FROM OPERATION	5,310,536	100	6,948,292	130.8	2,322,875	43.7	1,160,989	21.9	837,912	15.8
Add: Interest, Royalties, Dividends	266,906	100	612,802	229.6	359,523	134.7	259,894	97.4	515,806	193.6
TOTAL INCOME	5,577,442	100	7,561,094	135 6	2,682,398	48.1	1,420,883	25 5	1,353,718	24.3
Deduct: Interest Paid	283,850	100	289,920	102.1	256,623	90.4	155,838	54 9	121,298	42.7
Net for Federal Taxes	5,293,592	100	7,271,174	137.4	2,425,775	45 8	1,265,045	23 9	1,232,420	23.3
Deduct Federal Taxes	657,582	110	882,715	134 2	425,000	64.6	110,000	16.7	175,000	26.6
NET PROFIT	4,636,010	100	6,388,459	137 8	2,000,775	43 2	1,155,045	24.9	1,057,420	22 8
Deduct: Preferred Dividend	129,036	100	135,752	105 2	119,812	92.9	113,129	87 7	105,658	81.9
Net for Common	4,506,974	100	6,252,707	138 7	1,880,933	41 7	1,041,916	23 1	951,762	21.1
Deduct: Common Dividend	1,280,000	100	3,489,375	272 6	4,077,565	318 6	—	—	—	—
Inventory Adjustment	—	—	—	—	—	—	491,615	—	—	—
Amount Transferred to Surplus	3,226,974	100	2,763,332	85 6	2,196,632	68 1	550,301	17 0	951,762	29 5

[1] Not reported.

Figure 14. Comparative Horizontal Trend Analysis of Profit and Loss Statements

position. Though 1928 has so far given no indications of any decided gain, it would appear that the general outlook is materially better." [2]

Where quarterly or semi-annual balance sheets are available, a much more accurate horizontal trend analysis may be obtained by averaging the first two semi-annual statements or four quarterly balance sheets, with the result that an average statement is obtained for further comparative purposes. While this average statement may not represent an "ideal" or typical statement, nevertheless many of the seasonal conditions affecting receivables and inventory are removed and a further comparison can be made which is usually more accurate. In such an analysis, the first quarterly statement is taken as a base of 100% and the second quarterly statement compared with it as a base. Upon receipt of the third quarter statement the first and second quarters are averaged and the result is then used as the 100% base for comparison with the third quarter. Upon receipt of the fourth quarter report the same averaging process is resorted to and at the end of the year an average or typical statement is obtained. This averaged statement is then used as a base rather than the usual annual statement which may be subject to seasonal or year-end closing influences.

Frequently the usual annual report published at the close of the company's fiscal period reflects an abnormally ideal condition with respect to inventory and receivables inasmuch as the termination of the company's fiscal year will generally be selected at the low point of seasonal activity. It is not unusual to find all bank borrowings cleaned up at the end of the fiscal year, whereas two weeks later the corporation may have heavy loans outstanding. Where monthly statements are available, exceptionally accurate and desirable results may be obtained from such comparative analysis.

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[2] Standard Corporation Records, Vol. 6, No. 531, April 5, 1928, Individual Reports Section—Congoleum-Nairn, Inc.; Courtesy of the Standard Statistics Company, Inc., New York.

Comparative Trend Analysis of New Financing.—The comparative trend analysis of balance sheets is particularly valuable to the investment banker as a follow-up method for such issues as have been underwritten. (The follow-up study is explained in detail in Chapter XII.) In such cases the investment banker is in a particularly advantageous and strategic position to demand and obtain quarterly and, in some cases, even monthly statements of operations.

In follow-up studies the "balance sheet after giving effect to the present financing" is used as a base. On the assumption that the company is now financially "on its feet," it lies with the management to keep the company on a sound financial basis. By means of the comparative trend analysis method, the investment banker is able to keep a close check on operations and to detect well in advance any tendency toward the development of new industrial ailments or the recurrence of old ones which the financing was designed to correct.

Long-Term Trend Analysis.—Frequently it is of value, especially in the case of old established companies, to develop a long-term average or typical balance sheet by means of averaging the balance sheets for a period of three to five years representing as nearly as possible a period of what may be considered normal conditions for such an enterprise. Thus it might be reasoned that a period of three years composed of 1922, 1923, and 1924 or of five years from 1922 to 1926 inclusive might represent a standard balance sheet. Such a method would not be applicable to a company which was engaged in an industry of noticeably expanding proportions.

Vertical Percentage Method of Comparative Analysis.—Perhaps the most common method of vertical percentage analysis is that generally known as the 100% statement. This is a relatively simple process of applying the use of percentages to the balance sheet, and consists of using total assets and total liabilities

in their reported form as 100% items. The individual assets and liabilities are then figured as their respective percentages of the total. Thus funded debt, for example, will be shown as 35% of total liabilities or current assets 40% of total assets.

However, the outstanding weakness of such a method of analysis lies in the fact that no percentage relationship is obtained between the more important assets as well as liabilities, with the result that it is necessary to derive further percentage relationships and ratios between the significant assets and liabilities as individual groups. Furthermore, no comparison, as between the important assets and liabilities, such as current assets with current liabilities and fixed assets with net worth, is conveniently obtained.

By far the most satisfactory form of vertical percentage analysis will be found in the application of the 100% figure to net worth as determined by the analytical method developed in Chapters III and IV on the balance sheet analysis. Many important relationships and ratios between assets and liabilities and net worth are conveniently and automatically established as a result of the application of this 100% method to the balance sheet in its analytical equation form.

An interesting set of comparative vertical percentage figures is derived by comparing the annual statements of the Belding-Heminway Company for the years ending December 31, 1925-26-27, with the semi-annual statement for the six months ending June 30, 1928. Furthermore, the conclusions drawn from an analysis of this company's statements in Chapter X on Limited Analysis are approximately correct. This analysis anticipated the results of the first six months of 1928 in which an anticipated improvement failed to materialize and quarterly dividends were subsequently passed.

The "Where Got–Where Gone" Method of Comparative Balance Sheet Analysis.—The title "where got–where gone" has been applied by Professor William Morse Cole to the changes taking place in a balance sheet from year to year, and is another

means of describing the method which may be summarized as the sources and disposition of funds acquired by a business enterprise. Such a "where got–where gone" statement may be readily developed from an examination of the increases and decreases of the assets and liabilities of a company's comparative balance sheets either between two successive years or over a longer period of time.

Because of the fundamental principle of double entry bookkeeping that for every business transaction there must always be a corresponding or balancing entry, it is possible to reduce the mechanics of the preparation of a "where got–where gone" statement to a convenient formula which may be stated as follows:

Increases in assets + Decreases in liabilities = Decreases in assets + Increases in liabilities

When reduced to the problem of interpreting the equation into the question of the sources of funds and disposition of funds acquired, it will be readily seen that:

Decreases in assets (Cash) + Increases in liabilities (Notes payable to banks) representing Sources of funds

Equals

Increases in assets (Inventories) + Decreases in liabilities (Funded debt) representing Disposition of funds

An excellent example summarizing the operation of the "where got–where gone" statement is to be found in a pamphlet devoted to the analysis of balance sheets and profit and loss statements published by the Bureau of Commercial and Industrial Affairs of the Boston Chamber of Commerce (see Figure 15).

Many interesting and important conclusions may be drawn as a result of the application of the "where got–where gone" method of comparative analysis. A surprising degree of accuracy may be obtained as to the sources of funds and the disposition therewith by the management resulting in an excellent

Boston Chamber of Commerce Recommended Form

COMPARATIVE BALANCE SHEET OF THE BLANK MANUFACTURING CO.

as of.....and.....

ASSETS	End of Period	Beginning of Period	Decrease	Increase and Net Increase
CURRENT ASSETS:				
Cash	$ 50,000	$ 60,000	$10,000	
Marketable Securities	100,000	150,000	50,000	
Notes Receivable, net	3,750	5,000	1,250	
Accounts Receivable, net	73,500	50,000		$ 23,500
Inventories	300,750	150,000		150,750
Total Current Assets, showing net increase during period	$ 528,000	$ 415,000		$113,000
FIXED TANGIBLE AND OTHER ASSETS:				
Land	$ 25,000	$ 25,000		
Buildings	350,000	300,000		$ 50,000
Machinery	500,000	400,000		100,000
Miscellaneous Equipment	25,000	20,000		5,000
Furniture and Fixtures	5,000	5,000		
Goodwill	206,000	206,000		
Advances and Deferred Charges	5,000	6,000	1,000	
Organization Expense	15,000	25,000	10,000	
Total Assets, showing net increase during period	$1,659,000	$1,402,000		$257,000
LIABILITIES				
CURRENT LIABILITIES:				
Acceptances Payable	$ 75,000	$ 50,000		$ 25,000
Notes Payable	50,000	125,000	$75,000	
Accounts Payable	25,000	20,000		5,000
Accrued Expenses	5,000	2,500		2,500
Dividends Payable	50,000			50,000
Accrued Taxes	25,000	15,000		10,000
Total Current Liabilities, showing net increase during period	$ 230,000	$ 212,500		$ 17,500
FUNDED LIABILITIES	$ 350,000	$ 350,000		
RESERVE FOR DEPRECIATION:				
Buildings	$ 35,000	$ 30,000		$ 5,000
Machinery	100,000	80,000		20,000
Miscellaneous Equipment	2,500	2,000		500
Furniture and Fixtures	1,500	1,000		500
CAPITAL STOCK	500,000	486,500		13,500
SURPLUS	440,000	240,000		200,000
TOTAL LIABILITIES AND NET WORTH showing net increase during period	$1,659,000	$1,402,000		$257,000

Figure 15a. Form of "Where Got–Where Gone" Statement

INTERPRETATION OF COMPARATIVE BALANCE SHEET:

An analysis of the increase and decrease shows the following facts, viz.: an expansion in assets represented as follows:

Assets Showing Increases:		
Accounts Receivable	$ 23,500.00	
Inventories	150,750.00	
Buildings	50,000.00	
Machinery	100,000.00	
Miscellaneous Equipment	5,000.00	
Total Increase		$329,250.00
Less: Assets Showing Decreases:		
Cash	$ 10,000.00	
Marketable Securities	50,000.00	
Notes Receivable	1,250.00	
Advances and Deferred Charges	1,000.00	
Organization Expense	10,000.00	
Total Decrease		72,250.00
Net Expansion of Assets		$257,000.00
In addition to this expansion, cash was provided to pay off notes to the amount of		75,000.00
Grand Total		$332,000.00

The total expansion of $332,000.00 was provided for as follows:

Current Liabilities Increased:		
Acceptances Payable	$ 25,000.00	
Accounts Payable	5,000.00	
Accrued Expenses	2,500.00	
Dividends Payable	50,000.00	
Accrued Taxes	10,000.00	
Total Increase		$ 92,500.00
Cash proceeds from additional capital stock at par		13,500.00
Reserve for depreciation increased, not spent for replacements		26,000.00
Net Profit for year	$250,000.00	
Less: Dividend declared	50,000.00	
Remaining Net Profits		200,000.00
Grand Total (agrees with above)		$332,000.00

The change in the working capital of the company during the period is stated and accounted for in the following table:

Current Assets end of year	$528,000.00	
Add: Advances and Deferred Charges	5,000.00	
	$533,000.00	
Less: Current Liabilities	230,000.00	
Net Working Capital end of year (carried forward)		$303,000.00

Figure 15b. Form of "Where Got–

Brought forward			$303,000.00
Current Assets beginning of year		$415,000.00	
Add: Advances and Deferred Charges		6,000.00	
		$421,000.00	
Less: Current Liabilities		212,500.00	
Net Working Capital beginning of year			208,500.00
Net Gain in Working Capital during year			$ 94,500.00

DETAILS OF NET GAIN IN WORKING CAPITAL

Gross Gain:			
Net Profit during year		$250,000.00	
Add: Reserves for depreciation (deducted)		26,000.00	
Organization Expenses (deducted)		10,000.00	
Profit added to Working Capital		286,000.00	
Additional Capital Stock paid in		13,500.00	
Gross Gain			$299,500.00
Deduct:			
Additions to Buildings	$ 50,000.00		
Additions to Machinery	100,000.00		
Additions to Misc. Equipment	5,000.00		
		$155,000.00	
Dividends Declared		50,000.00	
Gross Deductions			205,000.00
Net Gain in Working Capital during year			$ 94,500.00

INCREASE IN NET WORTH DURING YEAR:

Net Profit earned during year		$250,000.00	
Additional Capital Stock paid in		13,500.00	
		$263,500.00	
Less: Dividends declared		50,000.00	
Total Increase in Net Worth during year			$213,500.00
Disposition Thereof:			
Increase in Working Capital (as above)		$ 94,500.00	
Additions to Plant, etc., as above	$155,000.00		
Less: Additions to Reserves for Depreciation, as above	26,000.00		
		129,000.00	
		$223,500.00	
Deduct: Organization Expenses reduced by the amount of, as above		10,000.00	
Total Disposition of Increase in Net Worth			$213,500.00

Where Gone" Statement (*Continued*)

Central Leather Company

STATEMENT OF RESOURCES AND FUNDS AND THEIR APPLICATION, 1910–1923

RESOURCES AND FUNDS PROVIDED actual cash or credit coming into the business from:	1910–1923 Total of 14 years
I. Net Profit or Loss after Federal Taxes but before interest on Bonds and Notes Payable	$68,867,281
II. Net Increase or Decrease in Reserves still in hand as working capital, but provided out of earnings for Insurance	601,624
Federal Taxes (being excess over taxes paid and not restored to earnings)	679,513
Contingencies	153,377
III. Borrowings from Banks, or Sale of Commercial Paper (net); that is the increase in Notes Payable	4,500,000
IV. Depletion Charges against earnings of lumber companies representing realization of investment therein and proceeds of sale of timber lands	14,801,231
V. Depreciation and Write-offs of Plant, deducted from earnings which, however, are still in hand including interest on the Company's bonds purchased and kept alive in the Company's Treasury Net after additions to Plant	6,520,982
VI. Liquidation of Investments and write-offs of investments deducted from earnings which, however, are still in hand	1,734,413
Total Resources and Funds Provided	$97,858,421

APPLICATION OF ABOVE RESOURCES AND FUNDS TO:	1910 to 1923
I. Interest on Bonds Issued	
In hands of public	$ 23,051,519
Alive in Sinking Fund and Treasury	3,275,153
II. Interest on Notes Payable	2,987,361
III. Dividends on Preferred Stock	26,222,963
IV. Dividends on Common Stock	17,766,138
V. Investments Made in Subsidiary and Affiliated Companies	8,026,720
VI. Purchase of Company's Bonds from Public to be kept alive in Company's Treasury	18,056,700
VII. Reduction of Notes Payable	14,480,500
Total Disbursements of Resources and Funds	$113,867,054
Net Increase or Decrease in Working Capital during the period being the difference between Provision and Disbursement	16,008,633*
Total as above	$97,858,421
Working Capital (including borrowed capital) at beginning of period	$ 65,943,009
Less: Working Capital (including borrowed capital) at end of period	49,934,376
Net Decrease in Working Capital as Above	$ 16,008,633*

* Decrease.

Figure 16. Practical Application of "Where Got–Where Gone" Method of Analysis

evaluation of the financial management as applied to the enterprise.

In Figure 16 will be found a summarized "where got–where gone" analysis of the balance sheets of Central Leather Company for the years 1910 to 1923 compiled in conjunction with the investigation and subsequent rehabilitation of the company later known as the United States Leather Company, and indicates a condition not uncommon to many industrials during this trying period of deflation.

Many important questions may arise as a result of the application of the "where got–where gone" method to balance sheet changes. Many of these questions may be answered by means of a consideration of the profit and loss statement which is essentially a detailed record of the transactions which have caused these changes in the periods considered. Where the profit and loss statement is inadequate in detail, these changes may be explained by a few diplomatic questions asked of the treasurer or president of the enterprise in question. While some of these questions may prove embarrassing, they will at least get down to the "bottom of things" upon which will rest the justification of many decisions made by the management.

The outstanding characteristics of this condition of Central Leather may be summarized as follows:

1. Although net profit after federal taxes but before interest on bonds and notes payable amounted to $68,867,281 for the period of fourteen years, cash dividends on preferred and common stocks amounted to $43,989,101, which was in excess of the net profit of $42,540,609 after payment of interest on bonds issued to the public and held alive in the sinking fund and treasury. This excessive payment of dividends reflects an inadequate reinvestment of earnings.

2. Liberal depletion and depreciation charges, which together with substantial write-offs of plant amounting to $21,322,213, reflects conservative treatment of fixed assets. Nevertheless, this does not necessarily mean that there did not exist a condition of

over-investment in fixed assets. As a matter of fact, a policy of liquidation, applied not only to inventories but also to fixed assets, was recommended in the investigation made by independent engineers which led to the subsequent rehabilitation of the company, as outlined in Chapter XIII.

3. There was a substantial retirement or purchase of the company's bonds amounting to $18,056,700, which were kept alive in the sinking fund and from which funds were derived for the retirement of additional indebtedness.

4. A reduction in notes payable or floating indebtedness of $14,480,500 was effected, reflecting the maintenance of a strong enough working capital position to make possible a satisfactory rehabilitation program.

5. A substantial investment was made in subsidiary and affiliated companies amounting to $8,026,720, which may be regarded as further evidence of over-expansion of fixed assets.

6. A net decrease took place in working capital amounting to $16,008,633 in fourteen years, which does not appear to be large in view of the magnitude of the company's operations and the expansion in fixed assets during a period which included the years of the World War.

The Comparative Profit and Loss Statement

The three methods of comparative profit and loss statement analysis may be summarized as follows:

1. The horizontal percentage trend method
2. The vertical percentage method
3. The ratio method

In this chapter we shall deal only with the first two methods. The ratio method will be discussed at length in the chapter immediately following.

The Horizontal Percentage Trend Method.—In this method each item on the profit and loss statement for the base year is

designated as 100% and the technique of compilation is the same as has been described for the comparative balance sheet analysis. In subsequent years, each account is computed on the base year and the new percentage thus derived is used as an index to show the change in the account. This method is particularly useful in showing the change in the amount of any account, from year to year. Such method is used in analyzing the Belding-Heminway Company profit and loss statements for the years December 31, 1925 to December 31, 1927 and appearing in Chapter X on the Limited Analysis.

From this analysis it can be seen that net profit for the year 1927 was only 39% of what it was in 1925 but that in 1927 dividends paid on the common stock amounted to 114% of the amount paid in 1925, and in 1926 were 171% of the amount paid in 1925. From these two facts, namely, the decrease in profits and the increase in dividends, one could easily foretell that dividends would soon have to be passed. This actually occurred after the first quarter of 1928.

Vertical Percentage Method.—In this method sales are used as a base, designated as 100%. Each of the other items in the statement is computed as a certain percentage of sales. By this means the relationship between various items in the profit and loss statement is indicated. This method likewise is used in conjunction with the horizontal percentage trend method in analyzing the statements of Belding-Heminway Co. From this analysis, it will be noted that in 1925 net profit amounted to 77.6% of net income from operations. In 1926 this percentage had decreased to 52.8% and in 1927 further decreased to 46.5%. It can also be seen from this analysis that dividends paid increased in 1926 despite the falling off of net profit. In 1926 dividends on the common stock amounted to 82.6% of income from operations as compared with 42.2% in 1925.

Sales Dollar.—The vertical percentage method is sometimes referred to as the "sales dollar method." This method of deter-

mining what percentage each item of expense is of net sales is of greatest importance to the business executive. Fred W. Shibley, Vice President of the Bankers Trust Company, in a booklet entitled, "The Banker's Relation to Industrial Reconstruction since 1920," [3] gives an excellent example of the use of the "sales dollar" in comparing the results of four companies in the same line of business. He states, "I present a somewhat general analysis of the Sales Dollar of four manufacturing corporations doing practically the same class of business under the same sales conditions in the same year, and under the same general management supervision. This is a splendid illustration of the lack of coordinated management control, for, as you will see, Company No. 2 did a very profitable business, and the central management seems not to have taken advantage of the knowledge gained in the operation of this company to apply that knowledge to the operations of the other three companies.

Sales Dollar	No. 1	No. 2	No. 3	No. 4
Manufacturing Cost	$ .779	$ .620	$ .709	$ .772
Selling and Shipping	.186	.127	.153	.139
Advertising	.016	.042	.043	.031
Administrative	.031	.036	.034	.045
Interest, Taxes, etc.	.037	.012	.032	.064
Profit	—	.163	.029	—
	$1.049			$1.051
Loss	.049			.051
	$1.00	$1.00	$1.00	$1.00

"The executive who applies the Sales Dollar idea to his own company can readily see in what respects his company is being more efficiently operated than his competitor's or in what respects his organization is less efficient than his competitor's."

United Typothetae of America has done a great deal in developing the "sales dollar" idea in the printing business. This association has compiled composite profit and loss statements according to the volume of sales of the companies making up

[3] Mr. Shibley has further developed the idea of industrial budgeting based on the sales dollar principle in his recent book, "A New Way to Net Profits," Harper & Bros., 1928.

Line No.				
1	GROSS SALES			$48,526,493.16
2	Less Sales Allowances			103,789.80
3	NET SALES			48,422,703.36
4	MATERIALS USED			
5	Paper	$10,238,157.76		
6	Ink	718,272.66		
7	Bindery Materials	645,987.88		
8	Miscellaneous Purchases	4,248,021.86		
9				
10	Total Materials Used		$15,850,440.16	
11	Stock Storage and Handling Expense		133,679.72	
12	FACTORY EXPENSES			
13	Rent	1,319,145.97		
14	Insurance	283,825.88		
15	Taxes	212,495.87		
16	Depreciation Plant Equipment	1,846,797.74		
17				
18	Total Factory Fixed Charges		3,662,265.46	
19	Wages	14,942,088.18		
20	General Factory Expenses	409,423.95		
21	Departments Direct Expenses	825,012.54		
22	Light	123,572.69		
23	Power	253,680.97		
24	Spoilage	163,671.50		
25				
26	Total Factory Current Expenses		16,717,449.83	
27	FACTORY COST TO MANUFACTURE (Total of lines 10, 11, 18, and 26)		36,363,835.17	
28	Add: Work in Process beginning of year		1,556,263.98	
29	Total		37,920,099.15	
30	Less: Work in Process end of year		1,906,762.38	
31	COST OF GOODS MANUFACTURED AND SOLD			36,013,336.77
32	GROSS PROFIT ON SALES (Line 31 substracted from line 3)			12,409,366.59
33	COMMERCIAL EXPENSES			
34	General Expense	813,816.20		
35	Office Expense	427,838.52		
36	Packing, Shipping and Delivery	393,544.68		
37	Salaries	4,084,700.69		
38	Bad Debts	296,806.28		
39	Fixed Charges			
40	Total Commercial Expenses		6,016,706.37	
41	SELLING EXPENSES			
42	Salaries and Commissions	2,283,408.64		
43	General and Traveling Expense	533,831.96		
44	Advertising	456,758.03		
45	Fixed Charges			
46	Total Selling Expenses		3,273,998.63	
47	TOTAL COMMERCIAL AND SELLING EXPENSES (Total of lines 40 and 46)			9,290,705.00
48	NET PROFIT ON SALES (Line 47 substracted from line 32)			3,118,661.59
49	FINANCIAL INCOME AND EXPENSES			
50	Interest and Discounts earned	208,110.27		
51		76,060.03		
52	Total		284,170.30	
53	Less Interest and Discounts Expense		297,403.08	Less 13,232.78
54	NET PROFIT FOR PERIOD (Line 53 substracted from line 48)			3,105,428.81
55	PROFIT AFTER DEDUCTION OF INCOME TAX			

Capital Stock and Surplus $..... Partnership or Proprietorship Net Worth $.....
Total Plant Equipment Investment (Machinery, Type, Furniture, and Fixtures) $21,014,074.07
Rates of Depreciation used.....242 Standard.....125 Not Standard.....
..... Total Inventory Materials $.....
Unused Machinery and Equipment $55,898 85 Amount Fire Insurance Carried (Contents) $.....
Average number of Employees (Mechanical Department) 9,222 Number Office and Sales Employees 2,127

Figure 17a. Form of Profit and Loss Statement Recommended to Its Members by the United Typothetae of America (Composite of 367 profit and loss reports in dollars and cents—1925 analysis)

No. Line				
1	GROSS SALES			.....
2	Less Sales Allowances			.....
3	NET SALES			100 %
4	MATERIALS USED			
5	Paper	21 14		
6	Ink	1 48		
7	Bindery Materials	1.34		
8	Miscellaneous Purchases	8.77		
9	.....	.....		
10	Total Materials Used		32.73	
11	Stock Storage and Handling Expense		.28	
12	FACTORY EXPENSES			
13	Rent	2 72		
14	Insurance	.59		
15	Taxes	.44		
16	Depreciation Plant Equipment	3 81		
17	.....	.....		
18	Total Factory Fixed Charges		7.56	
19	Wages	30.86		
20	General Factory Expenses	.85		
21	Departments Direct Expenses	1.70		
22	Light	.26		
23	Power	.52		
24	Spoilage	.34		
25	.....	.....		
26	Total Factory Current Expenses		34.53	
27	FACTORY COST TO MANUFACTURE (Total of lines 10, 11, 18, and 26)		75.10	
28	Add: Work in Process beginning of year		3.21	
29	Total		78.31	
30	Less: Work in Process end of year		3.94	
31	COST OF GOODS MANUFACTURED AND SOLD			74.37
32	GROSS PROFIT ON SALES (Line 31 subtracted from line 3)			25.63
33	COMMERCIAL EXPENSES			
34	General Expense	1.68		
35	Office Expense	.88		
36	Packing, Shipping and Delivery	.82		
37	Salaries	8.44		
38	Bad Debts	.61		
39	Fixed Charges	.....		
40	Total Commercial Expenses		12.43	
41	SELLING EXPENSES			
42	Salaries and Commissions	4.72		
43	General and Traveling Expense	1.10		
44	Advertising	.94		
45	Fixed Charges	.....		
46	Total Selling Expenses		6.76	
47	TOTAL COMMERCIAL AND SELLING EXPENSES (Total of lines 40 and 46)			19.19
48	NET PROFIT ON SALES (Line 47 subtracted from line 32)			6.44
49	FINANCIAL INCOME AND EXPENSES			
50	Interest and Discounts earned	.43		
51	.....	.16		
52	Total		.59	
53	Less Interest and Discounts Expense		.62	Less .03
54	NET PROFIT FOR PERIOD (Line 53 subtracted from line 48)			6.41
55	PROFIT AFTER DEDUCTION OF INCOME TAX			.....

Figure 17b. Profit and Loss Statement in Figure 17a Analyzed on a Percentage Basis

the group as well as composite statements for all companies irrespective of size. The form used for distribution among members for the submission of their figures appears in Figures 17a and 17b, with a composite of 367 profit and loss reports in dollars and cents and in percentages for the year 1925. In this way any company can find out what percentage of sales any one item should be for a company of its particular size. Research work of this nature is a great help to the smaller companies which are not able to undertake such analytical work themselves. These small companies are getting the benefit of expert industrial analysis without having to employ it directly.

CHAPTER VII

RATIOS—THEIR APPLICATION AND LIMITATIONS

The Development of Ratios.—For many years, investment and commercial bankers extended credit to their borrowers largely on a personal basis without attempting to support this personal evaluation by an analysis of the financial position of their customers. Later, as the prejudice against the publication of more detailed financial statements was gradually broken down, there developed a more or less limited technique of a ratio analysis of balance sheet and profit and loss statements. The current ratio was devised, and on this relation of current assets to current liabilities the banker placed considerable reliance. It was believed that it should always be 2 to 1 (200%) or better; that is, there should be $2 of assets for every $1 of liabilities. There would be, therefore, a margin of $1 of invested or owners' capital for every $1 borrowed, and net current assets or working capital would stand at $1.

Many bankers, accountants, and financial writers have regarded this amount of net current assets as working capital, while others prefer to consider the total current assets as working capital. No attempt will be made in these pages to undertake a theoretical discussion of which conception of working capital is the proper academic one, but working capital will be regarded as representing the net current assets. This is the generally accepted point of view in the field of banking, credit, and finance.

The current ratio was soon found to have its distinct limitations, and the somewhat arbitrary conception of a 2 to 1 ratio as being proper was soon discarded. Bankers particularly proceeded to devise other ratios such as the quick ratio, a ratio of cash to bank loans (notes payable), and one representing the

relation of cash to total current liabilities, as more effective measures of the company's current financial position.

Limitations to the Development of Standard Ratios.—Although a great deal of study has been undertaken in the field of standard ratios, the application of ratios to industrial analysis has many very definite limitations. Many analysts have become so enthusiastic over the possibilities in the use of ratios as to believe that they can be used as an absolute yardstick and detector of virtually all industrial ailments. Some advocates of the ratios have even gone so far as to maintain that any function of an industrial that is not normal can be quickly and accurately determined through the ratio method. This degree of faith in the use of ratios as a cure-all is hardly justifiable, and the method can only be used as one of the many means of suggesting where certain financial weaknesses may exist. Ratios cannot in themselves be used blindly as exact measures of financial performance.

The construction of a group of standard ratios is practically an impossibility, and it is obvious that almost as soon as developed, they become obsolete due to constantly changing business conditions. Even if it were possible to construct a group of standard ratios for any given period, it would be necessary to have almost ideal statistical conditions as a basis for such a compilation. Some of these conditions which would be statistically necessary may be summarized as follows:

1. Statements used must represent a large enough group of companies doing approximately the same kind and volume of business under similar geographical and economic conditions.
2. Accounting systems and methods should be substantially uniform, which is practically impossible in the industrial field in contrast to railroad and public utility operations.
3. All statements would have to be taken as of the same date, and, in view of rapidly changing business conditions, would have to be recent enough to be of value for comparative purposes.

4. A certain degree of uniformity of business and financial policy as reflected in the financial statements would be necessary for the derivation of a truly standard or ideal ratio. In view of the lack of regulation in the industrial field, this does not now and probably never will exist.

While the problem of developing standard ratios has important limitations, the reader should not obtain the impression that the authors take an extreme position in the matter and refuse to recognize any value in the use of the ratio as a method of comparative analysis. Although such a combination of conditions as outlined would seldom exist as a basis for the construction of a group of standard ratios, there are, nevertheless, very real possibilities in the use of ratios as an analytical medium, as will appear from the following discussion.

Recent Developments in the Study of Standard Ratios.— Two organizations have recently inaugurated a service in the field of ratio study which promises to provide a regular up-to-date and valuable medium through which the business man and banker will have a fairly accurate group of ratios for the purpose of comparative analysis. A table of ratios developed by the first of these, the Bank Service Department of the National Credit Office, is shown in Figure 18. With this study kept regularly up to date on a semi-annual basis, the analyst and bank credit man have one of the best bases for comparative ratio analysis which have been developed up to the present time. Even this study indicates a variation in the quick assets to quick debt or total current liabilities of from 5.78 to 1 in the case of the wholesale light hardware business to as low as 1.60 to 1 for factors in the textile field. Furthermore, it will be found that there are many wholesale light hardware companies that are in a sound financial condition with a ratio substantially less than 5.78 to 1. Such a study when regularly made along sound statistical methods has very real possibilities, and may be used to a marked advantage by the intelligent analyst who properly interprets such comparative

LINES OF INDUSTRY	Number of Concerns	Quick Assets to Quick Debt	Profits on Sales	Profits on Net Worth	Profits on Working Capital	Turnover of Working Capital	Turnover of Net Worth	Collection Period	Turnover of Inventory	Net Worth invested in Fixed Assets	Net Worth represented by Quick Debt	Net Worth represented by Total Debt	Working Capital represented by Inventory	Inventory represented by Quick Debt
		Ratio	%	%	%	*	*	Days	*	%	%	%	%	%
TEXTILES														
1. Converters Cotton Goods	14	2.90	3.65	11.40	10.70	3 58	3.33	72	4 75	1 6	55 4	57.4	85.5	74.8
2. Department Stores	91	3.45	4 10	9.40	15.83	4.15	2.35	53	5 13	37.7	28.6	39.8	82.3	61.1
3. Factors	13	1.60	1.26	10.41	10 49	9 64	9 31	50	—	—	149.4	149.4	—	—
4. Mfrs. Hosiery	22	3 24	3.92	9 91	20 53	4.65	2 08	49	4.52	52.2	26.3	33.1	90.7	71 8
5. Mfrs. Men's Wear (Cutters)	36	3.59	3.76	10.44	12 38	3 68	3 04	77	5.41	13 0	38.7	40.4	65.0	75.9
6. Mfrs. Work Clothing	14	3.70	5.05	10.69	18.15	3 23	2.36	60	4.16	17.9	**29.8**	30.6	76.8	55.0
Mills														
New England														
7. Cotton Cloth Mills	23	2.54	2.05	3.20	7.83	3.13	1.20	57	3.00	75.0	33.0	38.0	114.0	77.0
Southern														
8. Cotton Cloth Mills	55	2 89	8.59	10.35	50 70	5.96	1 62	41	4 29	61.3	30 1	34.8	82.0	142.0
9. Wholesalers Dry Goods	58	3 14	2.81	6.75	8 21	3 04	2 38	87	4 49	15.3	41.9	45 8	70.2	82.6
10. Wool Dealers	17	5 11	2 09	9.00	10 44	5 07	4 53	24	4 45	5.7	28 0	28.0	94.0	44.0
11. Woolen Cloth Mills	18	4.00	2.83	3.87	7.79	3 30	1.40	57	4 26	56.0	18 0	20 0	81.0	44.0
FOODSTUFFS														
12. Meat Packers (Big 4 eliminated)	25	2.89	.90	2.70	7.90	14.40	5.70	16	10.60	61.3	29 9	41 0	100.5	74 0
13. Wholesale Grocers	191	3.17	1.41	5.65	8.88	5.87	4.07	42	5.80	19.6	41.5	42.8	85.6	67.3
METALS														
14. Mfrs. Light & Heavy Hardware	63	5 16	5 13	8 38	18 52	4 75	1.53	56	4 43	49 5	19 6	27.0	77.6	55.3
15. Mfrs. Light & Heavy Machines	25	5 47	6 84	9 35	15 49	2 68	1.66	93	4 98	33 9	26 2	31 7	67.5	55 6
16. Mfrs. Stoves & Ranges	21	6 22	2 56	3.12	6 08	2 22	2 02	121	4 67	35 2	23.7	28 5	58.3	65 0
17. Wholesale Heavy Hardware	79	4 54	3 25	7.10	10 04	3 15	2 18	68	3 98	20 6	31.5	33 8	84.1	56 5
18. Wholesale Light Hardware	40	5.78	2 92	6.12	8 32	2 92	2.20	66	3.73	19 4	31.4	33.9	83.2	50.4
LEATHER														
19. Mfrs. Shoes	33	3 44	4 02	6 40	9.70	3 76	2 50	62	4 77	36 7	38 0	40.0	76 5	69 0
20. Tanners Upper Leather	19	3.20	5 37	7.06	9.14	2 85	1.96	50	2 91	35.0	31.0	33 0	93 0	45.0
LUMBER														
21. Mfrs. Furniture	25	3 90	6.64	10.84	19.73	2 82	1.63	94	4 99	42 1	22.6	28.2	64.3	68.1
22. Mfrs. Lumber	17	4 03	4.78	6 21	15 31	4 15	1 09	45	4 77	82 0	16.4	32.5	107.6	61.0
23. Retail Furniture	22	3 71	6.19	8.27	8 78	1.54	1.68	273	5 42	24 5	37 5	45.2	33.3	142.6
24. Retail Lumber	62	3.82	5.09	7.59	12.84	2.36	1.53	105	3.71	22.4	**19.8**	**21.5**	50.4	42.0
MISCELLANEOUS														
25. Auto Finance—Wholesale and Retail	29	1 84	1 12	13 45	6 73	5 94	12.00	—	—	—	285 0	386 0	—	—
26. Wholesale Drugs	29	3 43	3 03	7.87	9.96	3.54	2.72	69	4.95	17.0	35.3	37.0	74.4	57.9

* Number of times.

Figure 18. Important Ratios in the Prominent Industries Using the Open Market, Based on Financial Statements Issued During the First Six Months of 1928 on 1927 Operations (Table Issued by the Bank Service Department, National Credit Office)

figures. Even these figures, good as they are, cannot be used blindly and arbitrarily.

The second recent study worthy of special attention represents the inauguration by the Standard Statistics Company in their Standard Trade and Securities Service, of a series of studies of the trends and relationships, as disclosed by a composite income account statement and composite balance sheet for 545 leading American industrial concerns.[1] This recent analysis has tremendous possibilities. As it represents an outstanding contribution to the development of industrial analysis, an outline of the aims and purposes of this study is quoted from the first special supplement of August 8, 1928.

Adequacy of the Data.—"To a great extent this, and the following analyses in the series, will break virgin ground. The basic material itself is of course not new—corporation statements which are available to us are likewise available to any one who wishes to consult them. But the adequacy of the material, the method of handling it which has been adopted, the bringing of it together in composite form, the intensive study of the different items in the composite and of their relationship to one another, mark, we believe, a somewhat new departure in the study of corporation finance.

"An idea of the adequacy of the material with which we propose to deal is suggested by the fact that the 545 industrial corporations which it has been found possible to study intensively and on a comparable basis had, in 1927, an aggregate net profit amounting to about 2½ billions. The total net profit returned in 1926 by all corporations in the United States probably amounted to around 7 billions. Our data, therefore, probably represent fully one-third of the corporation data for the entire country.

"The corporations on our list paid nearly 2 billion dollars to their bond and stockholders last year, and evaluated their property at more than 17½ billions.

[1] This study has been further developed and interpreted in a recent publication: Laurence H. Sloan, Corporation Profits.

"Wherever possible, our study has been approached from the standpoint of the security markets and of security values."

As a result of this first study, certain very interesting conclusions have been drawn from the results of 1926 and 1927 operations of industrials. The startling decline in earning power in 1927 over 1926 is strikingly illustrated by the following composite income account for 543 industrial corporations excluding the General Motors and U. S. Steel Corporations.[2]

COMPOSITE INCOME ACCOUNT
543 Industrial Corporations

	1926	1927	Per Cent Change
	(In million dollars)		
Net profit	$2,489.55	$2,149.18	−13.7
Fixed charges	204.99	233.17	+13.3
Net Income	2,284.56	1,917.01	−16.2
Preferred dividends	226.62	207.20	− 8.6
Common dividends	1,152.56	1,205.19	+ 4.5
Total payments to security holders	1,584.17	1,644.56	+ 3.9
Carried to surplus	841.70	363.13	−56.8
Earned per $100 of invested capital	$10.4	$8.6	−17.5

Among other conclusions drawn from this first study by the Standard Statistics Company, the following are of interest and can be profitably borne in mind by the analyst. The first is the question of the publicity of financial statements upon which the author of the article makes the following comment.

"A number of years' experience in analyzing profits data has made us wholly familiar with the fact that the corporations which have the best results to report make those results public promptly, while those which have the poorest showings to report are customarily quite tardy in breaking the news."

A second observation is that with respect to the popular belief that the operation of refunding or borrowing at much lower interest rates will benefit the corporations and stockholders in the form of lower fixed charges and greater per share earnings. In this respect the Standard Statistics Company finds that: "The fixed charges of business undoubtedly increase more rapidly when

[2] Compiled by the Standard Statistics Company.

interest rates are low than when they are high. It *should* be the other way. But it isn't. The constant tendency to expand the *volume* of borrowing more than counteracts the benefits of lower interest rates."

The Construction and Use of Ratios.—A great many ratios have been developed by various writers, some of which are extremely valuable in detecting financial weaknesses, while others are of little more than academic statistical significance. Some of these ratios when constructed lose their significance in the process of being derived, as the business man requires a careful explanation of what elements were used in the construction of the ratio and a careful description of their significance before he can readily understand the ratio derived and appreciate its value. Certain other ratios are largely self-explanatory in their names, and wherever possible such practice should be used in the selection and use of ratios in financial analysis. In column A it will be noted the name of the ratio in itself is not descriptive of the elements that compose it, while in column B they may be considered as more explanatory.

A	B
Factor of Safety (Ratio of amount available after charges to the charges paid or accrued)	"Times Earned Interest and/or Fixed charges" (Net income available for Interest and/or Fixed charges ÷ Interest and/or Fixed charges requirement)
Financial Risk (Ratio of charges to amount available for their payment)	"Times Earned Interest and Charges or Preferred Dividend requirement" or "Earned per share on preferred or common"
Margin of Safety (Balance net profit after all charges and dividends)	"Percentage net profit carried to surplus" (Net profit carried to surplus ÷ Net profit available for dividends)

Thus it will be seen that in column A the ratios such as the Factor of Safety and Financial Risk are not self-explanatory,

and the business man or analyst is required to go back of the name and refresh his memory with the elements used in its construction. In column B, on the other hand, such a relationship as "Times Earned Interest or Preferred Dividend Charges" is self-explanatory as is "Dollars earned per share of common stock" and "Percentage of net profit carried to surplus." In each case they represent essentially the same thing and have the advantage of being self-explanatory. In the table given in Figure 19 will be found a complete list of 21 of the more important ratios, with their method of computation, and their significance in relation to the analysis of financial statements.

Ratio Method of Analysis Illustrated—Jones Brothers Tea Company, Inc. (Grand Union Company)

With the table in Figure 19 at hand, it is appropriate at this point to analyze the balance sheet and profit and loss statements for the five years ending December 31, 1927, of the Jones Brothers Tea Co. by the above ratio method and determine, if possible, what the past history has been and the probable future trend. A complete comparative analysis of the profit and loss statements and the balance sheets together with a summary of 21 ratios for the five-year period will be found in tables appearing in Figures 20, 21, and 22.

Throughout the following discussion of the comparative ratios of the Jones Brothers Tea Company, it is important that the reader bear in mind the limitations with respect to the practical derivation of any exact conclusions. Wherever a "standard" ratio is used for comparative purposes, such a "standard" represents no exact mathematical unit of comparison, but merely a fair average under normal circumstances. Furthermore, it should be repeated that in this ratio analysis no pretense is made that every abnormal condition can be quickly and accurately determined, or that sound remedies can be immediately suggested from the ratios derived.

RATIO	COMPUTATION	APPROXIMATE STANDARD IF ANY	REMARKS
(1) Current ratio	Current assets ÷ Current liabilities	None. (2 to 1 improperly considered standard for many years.)	Measure of current or working capital position of business.
(2) Cash to Bank loans (Notes payable)	Cash in banks ÷ Notes payable to banks (bank loans)	20%. 18% to 25%, depending on bank's policy.	Test of cash position. A valuable ratio.
(3) Cash to Current liabilities	Cash ÷ Current liabilities	10% to 15%.	Test of cash position.
(4) Quick ratio	Cash and receivables ÷ Current liabilities or Quick assets ÷ Quick liabilities	No absolute standard. Range from 1 to 1 (100%) to 6 to 1 (600%).	Excellent measure of the current or working capital position.
(5) Working capital represented by inventory (Per cent of net current assets, or working capital, invested in inventories)	Inventory ÷ Net current assets	33 3% retail furniture line. 114% cotton cloth mills (New England). See Figure 18.	Test of over-investment in inventories.
(6) Receivables turnover (Average length of outstanding receivables)	(a) Annual net sales ÷ Average outstanding accounts and notes receivable (net) (b) 360 days (year). ÷ Ratio derived from above equals average length of receivables outstanding	Should approximate the average terms of sale.	Excellent test of credit and collection policy and "over-investment in receivables."
(7) Inventory turnover	Cost of goods sold ÷ Average inventory at cost or market (whichever is lower)	Should approximate average length of period of manufacturing process.	Measure of production or trading efficiency and a test of "over-investment in inventories."
(8) Turnover of working capital	Net sales ÷ Average net current assets	Varies with type of enterprise. The higher the better.	Measure of manufacturing and selling efficiency.
(9) Sales to Net fixed tangible assets	Net sales ÷ Average total fixed assets	Varies with type of enterprise. The higher the better.	Test of "over-investment in fixed assets" and productive efficiency of plant and property.
(10) Sales to Net worth (Invested capital) or Total assets	Net sales ÷ Net worth	Varies from 1 to 360 times a year. With high margin of profit the higher the turnover the greater the profit.	Test of the management's ability to employ profitably tangible as well as intangible assets.
(11) Operating ratio	Operating expense ÷ Net sales	70% to 80% in railroads. 40% to 95% in industrials. The lower the better; cannot be over 100% for a very long period or bankruptcy will result.	Test of operating and manufacturing efficiency.
(12) Percentage of Net profit to Sales	Net profit ÷ Sales (net)	2% to 15%.	Test of efficiency of production, selling, and financial administration.
(13) Profits on invested capital (a) Including intangibles (b) Excluding intangibles	(a) Net profit ÷ Total net assets or net worth (b) Net profit ÷ Net tangible assets	7% to 20%. Has run as high as 35% in some lines at certain periods, over 100% in special cases.	Efficiency of management as a whole. Test of justification of goodwill as the factor in intangible assets. Test of over-capitalization.

RATIO	COMPUTATION	APPROXIMATE STANDARD IF ANY	REMARKS
(14) Net worth invested in fixed assets	Fixed assets (net) ÷ Net worth	Cotton goods 1.6% Lumber manufacturers 82% Varies with nature of business. } See Figure 18.	Test of over-expansion in fixed assets.
(15) Net worth represented by total current liabilities or "quick debt"	Current liabilities Quick liabilities } ÷ Net worth	16.4% lumber manufacturers 285.0% auto finance companies } See Figure 18.	Test of current or liquid position.
(16) Net worth represented by total debt (relation between invested and borrowed capital)	Total debt ÷ Net worth	20% southern woolen cloth manufacturer. 386% auto finance companies. See Figure 18.	Test of under-capitalization, increasing ratio unfavorable—indicating increased borrowing and greater dependence on bankers.
(17) Book value of common stock (a) Including intangibles	(a) Total net assets (Net worth) available to common ÷ Number of shares outstanding	No absolute standard. Frequently higher than market value.	Test of goodwill and intangibles indicated by excessive spread between these two book values.
(b) Excluding intangibles	(b) Net tangible assets ÷ Number of shares outstanding		
(18) Funded debt to total capitalization	Funded debt ÷ Total capitalization	25% to 35% industrials. 60% to 70% public utilities and railroads.	Test of balance in capital structure.
(19) Per cent of net profit carried to surplus	Net profit (After dividends) carried to surplus ÷ Net profit (After depreciation and adequate reserves have been taken out) available for common dividends	Average of 40% or more for industrials over a period of years. 19% for 545 companies in 1927 according to Standard Statistics Company's analysis.	Test of sound financial policy in financing expansion out of earnings.
(20) Earnings (a) Times earned interest charges	(a) Net earnings available for fixed charges ÷ Fixed charges	4 times or better for industrials. 6.58 times earned fixed charges for 273 companies in 1926. 5.25 times in 1927 as derived by Standard Statistics Company.	Test of security of principal and interest to bondholder.
(b) Times earned — Preferred dividend requirements	(b) Net earnings available for preferred dividends ÷ Preferred dividend requirement	4 times or better for industrials.	Test of security of dividend payments to preferred stockholders.
(c) Dollars earned—per share of common stock	(c) Net earnings for common stock ÷ Average number of common stock shares outstanding during period selected	None.	Best measure available of desirability of common stock ownership or purchase for the "long pull."
(21) Market price of securities Bonds Preferred stock Common stock	Public records High and Low for year or period selected for analysis	Old Standard of 10 times earnings per share since the market break of November, 1929, again appears to be more representative.	Generally bears little or no relation to book value and may or may not be substantially in excess of "real value."

Figure 19. Table of More Significant Ratios

Jones Brothers Tea

COMPARATIVE CONSOLIDATED BALANCE SHEET—

No.	Account	Dec. 31, 1923	% of Total Net Assets (Net Worth)	Base % 100	Dec. 27, 1924	% of Total Net Assets (Net Worth)	1924 % of 1923
1	Cash	699,754	4.8	100	352,689	7.5	50.4
2	Accounts Receivable (Net)	730,356	5 0	100	218,732	4.7	29.9
3	Inventories	3,465,937	23.7	100	3,044,591	64.8	87 8
4	Current Accounts with Agents	18,957	.1	100	33,047	.7	174.3
5	Employees' Deposit Funds	—	—	100	7,718	.2	—
6	Total Current Assets	4,915,004	33.6	100	3,656,777	77.9	74.4
	LESS CURRENT LIABILITIES						
7	Notes Payable (Banks)				1,160,000	24.7	—
8	Accounts Payable	2,592,421	17.8	100	—		—
9	Trade Acceptances Payable	—			438,646	9.3	61.7
10	Total Notes, Acc'ts. & Trade Accept. Payable	2,592,421	17.8	100	1,598,646	34.0	61.7
11	Employees' Deposits Payable	15,562	.1	100	16,792	.4	107.9
12	Accrued Expenses Payable	—			—		
13	Federal Taxes Payable	20,000	.1	100	—		—
14	Total Current Liabilities	2,627,983	18.0	100	1,615,438	34.4	61.5
15	NET CURRENT ASSETS—WORKING CAPITAL	2,287,021	15.6	100	2,041,339	43.5	89.3
	ADD FIXED TANGIBLE ASSETS						
16	Real Estate	—			—		
17	Plant and Machinery	—			—		
18	Total Plant & Property	2,239,530	15.3	100	2,241,606	47.5	100.0
19	Less: Reserve for Dep	831,540	5.7	100	1,384,553	29.5	166.5
20	Plant & Property Net	1,407,990	9.6	100	857,053	18.2	60.9
21	Investments	150,008[B]	1.1	100	39,746[C]	.8	26.5
22	Total Fixed Tangible Assets	1,557,998	10.7	100	896,799	19.0	57.6
23	Less: Purchase Money & Real Estate Obligations	—			70,820	1.5	—
24	Net Fixed Tangible Assets	1,557,998	10.7	100	825,979	17.5	53.0
25	NET TANGIBLE ASSETS	3,845,019	26.3	100	2,867,318	61.0	74.6
26	Intangible Assets						
27	Goodwill, Trademarks, Etc.	10,668,012	73.0	100	1,763,000	37.6	16.5
28	Deferred Charges	99,087	.7	100	67,393	1.4	68 0
29	Total Intangible Assets	10,767,099	73.7	100	1,830,393	39.0	17.0
30	TOTAL NET ASSETS (NET WORTH)	14,612,118	100 0	100	4,697,711	100 0	32.1
	Represented by						
31	Preferred Stock 7% Cum	3,760,000	25.7	100	3,760,000	80.0	100
32	Common	10,050,000[D]	68.8	100	125,000[A]	2.7	12.4
33	Surplus	502,081	3.4	100	500,464	10.7	99.7
34	Reserve for Contingencies	300,037	2.1	100	312,247	6.6	104.1
35	TOTAL CAPITAL & SURPLUS	14,612,118	100.0	100	4,697,711	100.0	32.1

[A] Includes $25,000 minority interest.
[B] Includes $80,000 sinking fund.
[D] Par Value $100, 100,000 shares. See Income Account for recapitalization—no-par shares.

Figure 20. Horizontal and Vertical Per-

Company, Inc.

YEARS ENDING DECEMBER 31, 1924, TO 1927

Dec. 31, 1925 (Jan. 2, 1926)	% of Total Net Assets (Net Worth)	1925 % of 1923	Dec. 31, 1926	% of Total Net Assets (Net Worth)	1926 % of 1923	Dec. 31, 1927	% of Total Net Assets (Net Worth)	1927 % of 1923
226,679	4.7	32.4	215,303	4.2	30.8	332,894	6.2	47.6
192,544	4.0	26.4	156,633	3.0	21.4	579,844	10.8	79.4
2,797,659	58.1	80.7	2,711,064	52.9	78.2	3,254,334	60.6	93.9
20,245	.4	106.8	—	—		12,364	.2	65.2
3,209	.1	—	—	—		—	—	
3,240,336	67.3	65.9	3,083,000	60.1	62.7	4,179,436	77.8	85.0
550,000	11.4		—			600,000	11.1	
298,658	6.2	32.6	345,383	6.8	13.3	742,674	13.8	51.4
337,059	7.0		375,280	7.3		408,404	7.6	
1,185,717	24.6	45.7	720,663	14.1	27.8	1,751,078	32.6	67.5
7,758	.2	49.9	—			—		
—			21,108	.4	—	56,727	1.1	—
—			—		—	11,000	.2	—
1,193,475	24.8	45.4	741,771	14.5	28.2	1,818,805	33.8	69.2
2,046,861	42.5	89.5	2,341,229	45.6	102.4	2,360,631	44.0	103.2
—			160,095	3.1	—	308,905	5.7	—
—			1,766,704	34.5	—	1,922,089	35.8	—
1,992,397	41.4	89.0	1,926,799	37.6	86.0	2,230,994	41.5	99.6
1,167,259	24.2	140.4	1,065,777	20.8	128.2	1,059,708	19.7	127.4
825,138	17.1	58.6	861,022	16.8	61.2	1,171,286	21.8	83.2
46,791	1.0	31.2	77,531	1.5	51.7	68,551	1.3	45.7
871,929	18.1	56.0	938,553	18.3	60.2	1,239,837	23.1	79.6
—	—		—	—		69,000	1.3	—
871,929	18.1	56.0	938,553	18.3	60.2	1,170,837	21.8	75.2
2,918,790	60.6	75.9	3,279,782	63.9	85.3	3,531,486	65.8	91.8
1,762,857	36.6	16.5	1,762,857	34.5	16.5	1,780,457	33.1	16.7
135,100	2.8	136.3	84,333	1.6	85.1	61,567	1.1	62.1
1,897,957	39.4	17.6	1,847,190	36.1	17.2	1,842,024	34.2	17.1
4,816,747	100.0	33.0	5,126,972	100.0	35.1	5,373,492	100.0	36.8
3,760,000	78.0	100.0	3,760,000	73.3	100.0	3,760,000	70.0	100.0
100,000	2.0	10.0	100,000	2.0	10.0	100,000	1.9	10.0
650,276	13.5	129.5	960,994	18.7	191.4	1,301,204	24.1	259.2
306,471	6.4	102.1	305,978	6.0	102.0	212,288	4.0	70.8
4,816,747	100.0	33.0	5,126,972	100.0	35.1	5,373,492	100.0	36.8

[c] $39,746 of investments appears in balance sheet of Dec. 27, 1924 reported on page 1134, Moody's Manual of Industrials for 1926; $47,464 reported on page 1158 of Moody's Manual for 1925 and includes $7,717 Employees' Deposit Funds.

centage Trend Analysis of Balance Sheet

Jones Brothers Tea

COMPARATIVE CONSOLIDATED INCOME ACCOUNT—

No.	Account	Dec. 31, 1923	Dec. 31, 1924	% of Total Sales	Base % 100
36	Total Sales	31,368,545	24,258,691	100.00	100
37	Cost of Sales	—	17,952,075	74.00	100
38	Gross Profit on Sales	—	6,306,616	26.00	100
39	Selling and General Exp.	—	6,152,478	25.36	100
40	Depreciation	—	144,708	.60	100
41	Total Selling, Gen. Exp. & Dep.	—	6,297,186	25.96	100
42	Net Operating Profit	—	9,430	.04	100
43	Other Income	—	156,420	.64	100
44	Total Income	—	165,850	.68	100
45	Other Charges:				
46	Interest	—	80,931	.33	100
47	Federal Taxes	—			
48	Total Interest & Taxes & Chgs.	—	80,931	.33	100
49	Net Income	165,905	84,919	.35	100
50	Preferred Dividends	266,350	134,225	.55	100
51	Net for Common Stock	*100,445*	*49,306*	*.20*	
52	Common Dividends	300,000	—		
53	Net Profit or Loss to Surplus	*400,445*	*49,306*	*.20*	
54	Surplus at Beginning	902,526	502,081	2.07	100
55	Surplus before Adjustments	502,081	452,775	1.87	100
56	Capital Surplus created by revaluation of Common Stock		9,900,000		
57	Total		10,352,775	42.68	100
58	*Surplus Charges*				
59	Revaluation of Goodwill and other Assets		*9,482,512*		
60	Loss on Coffee Operations		*369,799*		
61	Balance Sheet Surplus	502,081	500,464	2.06	100

Figure 21. Horizontal and Vertical Percentage

Company, Inc.

YEARS ENDING DECEMBER 31, 1923 TO 1927

Dec. 31, 1925 (Jan. 2, 1926)	% of Total Sales	1925 % of 1924	Dec. 31, 1926	% of Total Sales	1926 % of 1924	Dec. 31, 1927	% of Total Sales	1927 % of 1924
24,254,241	100.0	99.98	22,120,907	100.0	91.19	25,924,856	100.0	106.87
18,220,532	75.1	101.50	16,834,033	76.1	93.77	19,984,644	77.1	111.32
6,033,709	24.9	95.67	5,286,874	23.9	83.83	5,940,212	22.9	94.19
5,764,723	23.8	93.69	4,872,111	22.0	79.18	5,394,262	20.8	87.68
142,809	.6	98.69	118,468	.5	81.87	144,744	.6	100.02
5,907,532	24.4	93.81	4,990,579	22.5	79.25	5,539,006	21.4	87.96
126,177	.5	1,338.04	296,295	1.3	3,142.05	401,206	1.5	4,254.57
86,598	.4	55.36	52,893	.2	33.81	41,917	.2	26.80
212,775	.9	128.29	349,188	1.5	210.54	443,123	1.7	267.18
62,963	.3	77.80	38,470	.2	47.53	28,979	.1	35.81
—			—			11,000	.04	
62,963	.3	77.80	38,470	.2	77.80	39,979	.1	49.40
149,812	.6	176.42	310,718	1.3	365.90	403,144	1 6	474.74
—			—	—		—		
149,812	.6		310,718	1.3		403,144	1.6	
—			—	—		—		
149,812	.6		310,718	1.3		403,144	1.6	
500,464	2.1	99.68	650,276	2.9	129.52	960,994	3.7	191.40
650,276	2.7	143.62	960,994	4.2	212.25	1,364,138	5.3	301.28
—			—	—		—		
650,276	2.7	6.28	960,994	4.2	9.28	1,364,138	5.3	13.18
—								
—			—	—		[A] *62,934*	.3	
650,276	2.7	129.93	960,994	4.2	192.02	1,301,204	5.0	260.00

[A] $62,934 unaccounted for difference resulting from failure of Balance Sheet Surplus to reconcile with Income Account. Figures compiled from N. Y. Stock Exchange Listing Notice on Jones Brothers Tea Co. A-7915 dated March 16, 1928.

Trend Analysis of Profit and Loss Statement

Jones Brothers Tea Company, Inc.

Ratio No.	Computation	1923	1924	1925	1926	1927
	Item divided by Item					
1	6 ÷ 14	187% or 1.87 – 1	226% or 2.26 – 1	272% or 2.72 – 1	416% or 4.16 – 1	230% or 2.30 – 1
2	1 ÷ 7	–	30.4%	41.2%	–	55.5%
3	1 ÷ 14	26.6%	21.8%	19.0%	29.0%	18.3%
4	1 + 2 + 4 ÷ 14	55% or .55 – 1	37% or .37 – 1	37% or .37 – 1	50% or .50 – 1	50% or .50 – 1
5	3 ÷ 15	151.4%	149.1%	136.7%	115.8%	137.9%
6A	36 ÷ 2	42.9 (times)	110.9 (times)	125.96 (times)	141.2 (times)	44.7 (times)
B	360 ÷ A	8 days	3 + days	3 – days	2½ + days	8 days
7	37 ÷ 3	–	5.9 (times)	6.5 (times)	6.2 (times)	6.1 (times)
8	36 ÷ 15	13.7 (times)	11.9 (times)	11.8 (times)	9.5 (times)	11.0 (times)
9	36 ÷ 24	20.1 (times)	29.4 (times)	27.8 (times)	23.6 (times)	22.1 (times)
10	36 ÷ 30	2.2 (times)	5.2 (times)	5.0 (times)	4.3 (times)	4.8 (times)
11	37 + 41 ÷ 36	–	99.96%	99.5%	98.6%	98.5%
12	51 ÷ 36	Deficit	.20%	.6%	1.3%	1.6%
13A	49 ÷ 30	1.13%	1.81%	3.1%	6.1%	7.5%
B	49 ÷ 25	4.21%	2.96%	5.1%	9.5%	11.4%
14	24 ÷ 30	10.7%	17.5%	18.1%	18.3%	21.8%
15	14 ÷ 30	18.0%	34.4%	24.8%	14.5%	33.8%
16	14 + 23 ÷ 30	18.0%	35.9%	24.8%	14.5%	35.1%
17A	30 – 31 ÷ 32	$107 per share	$7.50	$10.57	$13.67	$16.13
B	25 – 31 ÷ 32	$.85 per share	*$7.04*	*$8.41*	*$4.80*	*$2.29*
18	21 ÷ 30	none	1.5%	none	none	1.3%
19	51 ÷ 53	*250.8%*	*100 %*	100 %	100 %	100 %
20A	44 ÷ 48*	–	2.04 (times)	3.48 (times)	9.1 (times)	15.3 (times)
B	49 ÷ 50†	.63 (times)	.32 (times)	.57 (times)	1.18 (times)	1.53 (times)
C	51 ÷ 32‡	*$1.00*	*$.39*	*$.13*	$.48	$1.40
21A	Preferred	not available	not available	not available	not available	—
B	Common	H – 60⅜ L – 20⅜	H – 27½ L – 14¾	H – 27⅞ L – 11¾	H – 19½ L – 9	H – 34⅝ L – 10⅝

* Fixed charges taken as total of "Other Charges," "Taxes," and "Interest" as appearing in Income Account. No funded debt.

† Preferred dividend requirement, $263,200, 7% on $3,760,000, $100 par value outstanding per balance sheet at Dec. 31, 1923 to 1927.

‡ 100,500 shares $100 par in 1923. 1924 to 1927—No par shares of 125,000 and 100,000, respectively

Figure 22. Table of Comparative Ratios—1923–1927

History of Business.—This business was founded in 1872 by Frank S. Jones, Cyrus D. Jones, and Charles F. Jones as partners, under the name of the Grand Union Tea Company with an original capital of less than $1,000. This company did a distributing business solely. In 1900 it was incorporated under the laws of the state of New Jersey with a capital of $1,000,000, all of which was issued. During the period from 1872 to 1910, the Jones brothers as individuals had opened a factory in Brooklyn under the name of Jones Brothers Company, for the manufacture of the products which were distributed through the Grand Union Tea Company, which represented one of the early chain store companies. In 1910 the Jones Brothers Company was likewise incorporated.

On December 9, 1916, a new Jones Brothers Tea Company, Inc. was organized as a holding company under New York laws, as a consolidation of the Jones Brothers Company, and Jones Brothers Tea Company, Inc. (the constituent company). The new company acquired all of the capital stock of the Grand Union Tea Company, Anchor Pottery Company, and Globe Grocery Stores, Inc. The new holding company was hopelessly over-capitalized, with $4,000,000 of 7% cumulative preferred stock and $14,000,000 of $100 par value common stock. The parent company operated through its subsidiaries 334 retail stores in some 251 cities and towns, covering practically every section of the United States. The manufacturing subsidiary had extensive facilities for the roasting of coffee and the preparation and packing of spices, groceries, etc., selling its output through the Grand Union Tea Company and Globe Grocery Stores, Inc.

On December 31, 1924, control of the company passed into new hands and efforts were made to correct the over-capitalization by a change in the common stock from $100 par to no par, with a corresponding revaluation of goodwill and other intangible assets of from $10,668,018 to $1,763,000. At the same time a loss of $369,799 on coffee operations was written off. Rates of from ½% to 1% had been paid at various times on the $10,000,-

000 of $100 par common stock outstanding from July, 1919, to October, 1923, with no dividends in 1921. The preferred dividends were paid regularly until reduced and passed in 1924.

After the recapitalization sales failed to show any very definite upward trend, and only a nominal profit was shown. Net profit, as will be noted in the table in Figure 21, increased from a loss of $49,306 in 1924 to a profit of $403,144 in 1927. In March, 1928, plans were formulated for the simplification of the capital structure by the funding of the accrued unpaid dividends on the preferred stock and a consolidation was effected with the Oneida County Creameries Co., Inc.

In June, 1928, plans were completed and application was made to the New York Stock Exchange for the listing of 100,000 shares of $3 series cumulative convertible no-par preferred stock and voting trust certificates for 165,000 shares of no-par common stock of a new company, the Grand Union Company, in exchange for the common and preferred stock of Jones Brothers Tea Co., Inc., and the capital stock of the Oneida County Creameries Company. Arrangements were made for the issuance of 150,000 shares of common stock on conversion of preference stock and 30,000 shares of common to officers, directors, voting trustees, and employees at prices to be determined from time to time by the board of directors.

With the new financing and the acquisition of the Oneida County Creameries Co., Inc., goodwill and intangibles increased from $1,780,457 to $2,280,457. These changes, while they give the appearance of not effecting little if any additional strength from a comparison of the balance sheets before and after financing, are offset, however, by the addition of a profitable unit, changes in management, and the introduction of strong banking interests. At the time of writing it is impossible to determine with what substantial degree of success the new Grand Union Company will meet. However, with sales for the first four months of 1928 showing a 21.4% increase over 1927, the outlook for the new company appears encouraging.

1. **Current Ratio.**—The ratio of current assets to current liabilities for the five years, 1923 to 1927, ranged from a low of 187% or 1.87 to 1 in 1923, to a high of 416% or 4.16 to 1 in 1926. This cannot be regarded as especially satisfactory when compared with a current ratio of 458% or 4.58 to 1 as developed by the Standard Statistics Company in its study of 545 industrial statements for 1927. Furthermore, the current ratio of the Jones Brothers Tea Company dropped from 416% in 1926 to 230% in 1927.

The fallacy of the 2 to 1 current ratio as used in the past is obvious. The nature of the business involved represents an important factor in the analysis of the current ratio. A retail enterprise of the chain store type doing a cash business and showing a good turnover of inventories and an efficient employment of its capital can get along with a much lower current ratio than a business of the opposite type as represented by a shipbuilding, steel, or railway equipment manufacturing concern.

Possible comparative ratios for a similar company for the year 1927 may be listed as follows:

	1923	1924	1925	1926	1927
Jewel Tea	3.14	3.58	3.99	3.27	2.91

2. **Cash to Bank Loans (Notes Payable).**—In each one of the years analyzed from 1923 to 1927, this ratio indicated a very satisfactory condition. The ratio varied from 30.4% in 1924 to 55.5% in 1927. In 1923 accounts and notes payable were combined and carried as one item, thus making it impossible to figure this ratio. Our commercial banks generally require their borrowing customers to carry from 18% to 25% balances against loans. Therefore, this requirement can be used as an analytical medium, with the result that a good test of cash position can be obtained by determining the percentage of cash in banks to notes payable or bank loans. If not available, a ratio of total cash to notes payable to banks or bank loans can be figured. Considering 20% as normal, it is obvious that the cash

position at all times has been kept fairly strong with a ratio of from 30% to 50%.

3. Cash to Current Liabilities.—As will be noted from the table of comparative ratios, the percentage of cash to total current liabilities ranged from a low of 18.3% in 1927 to a high of 29% in 1926. Although no standard has been developed, it is generally felt that to be satisfactory, cash should be from 10% to 15% of current liabilities, or in other words, total current liabilities should not exceed 10 times cash. While large balances of cash, marketable securities, and call loans are frequently pointed to with pride, it is also true that such a condition is indicative of the unprofitable employment of capital by the enterprise. Surplus capital represented by cash in banks or invested in marketable securities or even placed under the most favorable call loan market conditions cannot earn much more than 6% on the average. It should, if profitably employed in the business, earn 10% to 20%. Thus an excess of cash or working capital may be just as unsatisfactory in many ways as too little.

The ratio of cash to current liabilities for the Jones Brothers Tea Company, Inc., appears to be generally satisfactory.

4. Quick Ratio.—The quick ratio when developed subsequently to the three previously mentioned is particularly valuable as a further test of the proper distribution of current assets and liabilities. At no time in the last five years has this represented a thoroughly satisfactory condition.

The quick ratio consisting of the percentage of cash together with notes and trade accounts receivable to total quick liabilities shows a low of 37% in 1924 and 1925 and a high of about 50% in the other years. It is obvious that too large a portion of current capital is tied up in inventories on the basis of the sales volumes, which has not shown any very decided improvement since 1923. The quick ratio, while again impossible to represent as any absolute standard, should be about 1 to 1 or 100%.

It will be noted in the table of ratios compiled by the National Credit Office (Figure 18) that the ratio of quick assets to quick debt for 26 lines of industry ranged from a low of 1.60 for factors to a high of 5.78 to 1 or 578% in the case of wholesale light hardware companies.

While it is to be expected that chain stores would carry relatively heavy inventories in comparison to receivables and cash, nevertheless the cash nature of their business should result in a reasonably prompt liquidation of current accounts payable. Their quick ratio is improved providing proper inventory turnovers are being achieved through a well-planned budget of sales volume.

The quick ratio, therefore, when considered with the ratios of receivables and inventory turnover, provides an excellent test of over-expanded or frozen inventory. These ratios, when further supported by the horizontal trend percentages, especially as figured on the basis of quarterly balance sheets, provide about as accurate statistical proof of weak inventory position as is possible to obtain from the financial statements generally available to the analyst.

5. Working Capital Represented by Inventories.—A measure of over-expansion of inventories will be found in the percentage of net current assets (working capital) invested in inventories. This will frequently run well in excess of 100%, or inventories will be greater than net current assets or working capital, particularly in manufacturing or processing types of enterprise. Cotton cloth mills in New England had 114% of net current assets invested in inventories in 1927 as figured from statements issued during the first six months of 1928. While retail furniture companies were found to have but 33.3%.

Jones Brothers Tea Company is evidently overstocked with inventories representing 137.9% of net current assets in 1927, increasing from 115.8% in 1926. With a high ratio of 151.4% in 1923, this percentage was reduced, as should be expected, in the face of a declining volume of sales to 149.1% in 1924 and

136.7% in 1925 to its low figure of 115.8% in 1926, but increasing sharply in 1927 to 137.9%.

In striking contrast to the ratio of 137.9% in 1927, Jewel Tea Company had only 44.8% of working capital or net current assets represented by inventory.

6. Receivables Turnover or Average Length of Accounts Receivable Outstanding.—Accounts receivable outstanding at December 31 of each year, when divided into total sales, shows a low ratio of 43 times in 1923 and a high of 141 times in 1926. This ratio when in turn divided into 360 days of the year indicates an average length of period for outstanding receivables of from 8 to 2½ days. It is significant that, after attempts were made to correct the unsatisfactory conditions prevailing in 1923, which indicated a turnover of 8 days, the turnover improved to 3 days and finally in 1926 to nearly 2½ days. However, expansion was again undertaken in 1927, with the result that receivables turnover again slowed down to 8 days.

Receivables turnover in an enterprise of this character is expected to be high in view of the cash nature as well as perishable character of its business. From the National Credit Office's table of ratios (Figure 18) the collection period or receivables turnover for meat packers, eliminating the "Big 4," is 16 days, while that for wholesale grocers is 42 days.

For Jewel Tea Company the period in 1927 was 18.8 days and in 1926, 8.9 days.

7. Inventory Turnover.—The inventory turnover, while higher than for the average industrial company is low and unsatisfactory when considered in relation to the nature of the business and when compared with that of competing companies in similar fields.

Cost of sales not being available in 1923, no inventory turnover was figured, and when derived for 1924, it was found that inventory when divided into cost of sales indicated an average

of 5.9 times which improved to 6.5 times and then declined to 6.1 in 1927.

The limitations in such a turnover relationship are obvious, inasmuch as no average inventory is available for quarterly periods and it is not known on what basis it is valued. Loss on coffee operations of $369,799 affords evidence of the fluctuation in inventory values.

Inventory turnover, as figured by the National Credit Office, ranges from a low of 2.91 times for tanners of upper leather to 10.60 for meat packers, again eliminating the "Big 4."

In a descriptive booklet on chain store securities published by the investment banking house of George H. Burr and Company, the following comment is made on the importance of inventory turnover.

"Careful purchasing and constant supervision of inventories keep the stock of the modern chain store fresh and up-to-date. Goods are bought by trained buyers who are specialists in determining the needs of the department for which they buy. They are in close touch with commodity markets, and by clever purchasing, careful inventory control and prompt deliveries they can keep inventories at a minimum and increase turnover and earnings on investment.

"Stock is displayed attractively and arranged to make its purchase easy for the customer.

"Expert management further aids in preventing the accumulation of undesirable or slow lines. The turnover of the chain store system, because of these things, is usually far greater than that of the independently operated store. The modern variety chain unit turns over its stock anywhere from 5 to 8 times a year, while a turnover of from 2 to 3 times a year is considered satisfactory in the case of the independent who is equally well located. This faster turnover gives the chain another advantage and has been an important factor in increasing its net earnings."

Inventory turnover for Jewel Tea Company in 1927 was approximately 10.4. This turnover is figured on the basis of net

sales—cost of sales not being indicated in the company's reports as published.

8. Turnover of Working Capital.—The working capital turnover for Jones Brothers Tea Company is comparatively high and ranges from a low of 9.5 times in 1926 to a high of 13.7 in 1923. This ratio, being a composite relationship and including the effect of both the receivables turnover and inventory turnover should represent a measure of manufacturing as well as selling efficiency. Most chain store organizations doing little, if any, manufacturing or processing of inventories will, therefore, reveal to a certain degree the efficiency of their purchasing and selling ability in the speed with which they can successfully utilize their working capital.

While working capital turnover is high, or from twice to three times that of Jewel Tea Company, Inc., which in 1927 was 4.6 times, profits for Jones Brothers Tea Company were negligible in contrast to the comparatively high earnings of the more successful Jewel Tea Company.

The lack of uniformity in this ratio is explained by the fact that based on the large inventory and low turnover, as well as the employment of borrowed money, the Jones Bros. Tea Company is operating with too little invested working capital. The result of such operations is to create a high working capital turnover which is not illustrative of a high degree of selling efficiency and resultant profits.

Turnover of working capital as figured by the National Credit Office ranges from 1.54 times in the case of retail furniture enterprises to 14.40 times for meat packers, not including the "Big 4."

9. Sales to Net Fixed Tangible Assets.—This ratio appears very satisfactory and indicates a turnover ranging from 20.1 times in 1923 to 29.4 times in 1924, thereafter declining to 22.1 times in 1927. It is obtained by dividing gross sales by net fixed tangible assets as determined in the statement analysis in Figures

20 and 21. Net fixed tangible assets represent real estate, investments, plant machinery and property, or in other words, the fixed investment in the business net of reserves. Such a high ratio of turnover is typical of chain store concerns which have a relatively low fixed investment in store sites, warehouses, and equipment, most of which are leased. Such a condition peculiar to this type of enterprise would account for such a high turnover figure. During 1928, there was a tendency on the part of chain store companies to incorporate realty subsidiaries, thus segregating a large part of their fixed investment and realty operations from the merchandising function. Despite the relatively high turnover of fixed investment, the cost of securing and doing business completely offsets any advantage in this turnover, with the result that net operating profit is small.

Frequently, it is difficult if not impossible to obtain sales figures, and thus one is prevented from figuring the turnover ratio of net fixed tangible assets. Because of this difficulty the Standard Statistics Company has compared property accounts, which in reality represent net fixed tangible assets or plant and property as well as investments in subsidiaries, to net profit. They have compiled an interesting table representing the "Number of Dollars of Property Required to Produce One Dollar of Net Profit" for various lines of industry for 1926 and 1927. This shows a range of from 48 cents in 1927 for 9 companies in the drugs, medicines, and cosmetics group to a high of $65.96 for 11 coal companies. This table, on following page, effectively indicates the prevalence of a high or low fixed asset account in various lines of industrials and indicates an average for 544 companies in 1927 of $6.96 of property for every $1 of net profit.

In the case of Jones Brothers Tea Co., Inc., $2.93 of net fixed tangible assets were required in 1927 to produce $1 of net income (item 24 — $1,170,837 ÷ item 14 in the income account of $403,144). In contrast to Jones Brothers, Jewel Tea Company required only 58 cents in 1926 and 43 cents in 1927.

PROPERTY ACCOUNTS AND NET PROFITS IN VARIOUS LINES COMPARED

GROUP	No. Cos.	Number of Dollars of Property Required to Produce One Dollar of Net Profit	
		1926	1927
Drugs, Medicines, Cosmetics, etc.	9	$ 0.55	$ 0.48
Office and Business Equipment and Supplies	7	1.30	1.19
Shoes	4	2.18	1.68
Tobacco Products	17	1.60	1.69
Retail Trade	51	2.93	2.95
Automobiles	24	2.71	2.99
Radio and Musical Instruments	8	3.49	3.04
Electrical Equipment	6	3.10	3.34
Apparel	13	3.36	3.46
Automobile Parts and Accessories	22	2.74	3.53
Agricultural Implements	7	3.61	3.56
Household Equipment and Supplies	14	3.96	3.65
Miscellaneous Manufacturing	33	3.53	3.68
Food Products (other than meat)	36	3.88	3.91
Lead and Zinc	7	3.09	4.15
Silk Goods	4	22.67	4.84
Machinery and Machine Equipment	24	4.69	5.84
Automobile Tires	9	7.02	5.98
Chemicals (Industrial)	14	6.08	6.05
Theatres, Motion Pictures and Amusements	14	5.70	6.34
Miscel. Mining and Smelting	14	6.99	7.01
Building Equipment and Supplies	31	5.89	7.06
Railroad Equipment	13	5.72	7.55
Miscellaneous Services	14	9.47	8.09
Meat Packing	3	6.84	8.17
Copper	17	8.97	9.55
Cotton Goods	7	38.73	12.28
Oil	51	7.37	13.56
Paper	7	13.25	13.61
Sugar	13	17.83	13.91
Steel	22	11.87	15.64
Shipping and Shipbuilding	7	25.85	19.15
Leather	3	25.70	57.85
Woolen Goods	4	*	58.48
Coal	11	29.75	65.96
Fertilizers	3	17.05	*
Average—544 Companies		6.11	6.96

* Operated at a deficit.

10. **Sales to Net Worth.**—In contrast to the turnover of net fixed tangible assets, it is important to note the rate of turnover of net worth. From the balance sheet analysis it will be seen that net worth represents the total net assets of the business which consequently includes the property account as well as net current assets, together with the intangible assets of goodwill and deferred charges. Turnover of net worth is 4.8 times in contrast to the previous ratio of turnover for net fixed tangible assets of 22.1 times in 1927.

In view of the sharp reduction in the turnover of net worth as compared with that of net fixed tangible assets, it is evident that this sharp reduction is indicative of a serious condition of over-capitalization. While efforts were made to correct this condition as of December 31, 1924, by a change in the common stock from $100 par value to no par and a reduction in the goodwill account of about 9½ millions, it is evident from the continued spread in the ratios that an over-capitalized condition continued to exist. As has already been indicated, a subsequent readjustment of capital structure was made in 1928 at the time of the formation of the new Grand Union Company.

It is evident that, while fixed assets may show a favorable turnover, the cost of doing business and the excessive capitalization prevent a satisfactory showing of net profit and earnings per share.

11. **Operating Ratio.**—Although detailed operating figures are not available, it is evident that the cost of doing business is excessive. Net operating profit from 1924 to 1927 represented less than 2%, and ranged from a low of .04% in 1924 to 1.5% in 1927. Selling and general expense appears high and is in excess of 20% for each of the four years. It has, however, been reduced from 25.36% in 1924 to 20.8% in 1927. This improvement has been partially offset by the increase in cost of sales.

In 1927, Jewel Tea Company, Inc., had an operating ratio of 87% and showed a net operating profit of 13% on sales.

A vertical percentage analysis of the income account should ordinarily be based on net sales as 100%, but frequently such information is not available. For the usual purposes of analysis total sales may be used, the spread between gross or total sales and net sales generally being small and of minor importance.

In a Complete Analysis or in a Special Study (see Chapter XIII), a careful breakdown of cost of sales (cost of goods sold), selling expense, and general expense is required as a basis for determining the reasons for this excessive cost of doing business.

12. Percentage of Net Profit to Sales.—This ratio is again indicative of the excessive cost of doing business. Net operating profit before other income and charges, as will be seen from the comparative income account, ranges from .04% in 1924 to 1.5% in 1927. While net profit available to common stock dividends represents a deficit of .20% of sales in 1924, in 1927 this had improved to a profit of 1.6% of sales.

Standard Statistics Company has developed a slightly different measure of net profit. This measure of earnings as developed from 545 leading industrial statements is called "The Percentage of Gross Income Saved for Net Profit." Considerable difficulty was experienced in obtaining data from annual reports lacking in a uniformity and the following explanations are quoted:

"The figures taken as net profit in each case are, of course, those reporting such profits before fixed charges.

"In selecting concerns which we believe to be comparable on the basis of reported gross income we have necessarily allowed ourselves a certain amount of latitude. Methods of reporting this item (when it is reported at all) are far from uniform. This point may be strikingly illustrated by the following tabulation which shows the first item on the official income account statements of each of the first 20 companies which were checked in this study:

Company No. 1–Net sales
No. 2–Net income
No. 3–Gross revenue after manufacturing expense
No. 4–Operating income
No. 5–Operating profit
No. 6–Operating income
No. 7–Gross manufacturing profit
No. 8–Net sales
No. 9–Sales
No. 10–Gross profit
No. 11–Net income
No. 12–Net sales
No. 13–Gross sales
No. 14–Net profit
No. 15–Total income
No. 16–Net income before depreciation
No. 17–Net sales
No. 18–Net sales and other income
No. 19–Total income
No. 20–Gross revenue

"Here is variety enough to satisfy even the most restless mind. The terms net sales, gross sales, sales, and gross revenue are often used interchangeably. But it cannot be assumed that they are always used interchangeably; in some lines of business and trade there is an especially wide difference in the values referred to as net sales and gross sales.

"Therefore, it has been necessary to examine each item, in the case of every reporting corporation, somewhat critically. Where a strong doubt existed that the item reported was truly representative (or approximately representative) of gross income, the company concerned has been eliminated from the list entirely. In other cases, where there existed a minor doubt as to the precise meaning of the reported item, choice as to inclusion or exclusion was made on what has appealed to us as a common sense basis.

"Naturally, the purpose has been to include as many corporations as possible in the study, so that the results would be the

more representative. And it goes without saying that these results, as is always true in studies based upon great volumes of data, are claimed to be only closely approximate, rather than precise down to the last penny."

Results of a most interesting nature were obtained and a conclusion was reached in which 9.75% and 9.12% of gross income was saved for net profit in 1926 and 1927, respectively, for 235 corporations in which comparison was possible. This compares with approximately .68% for Jones Brothers Tea Company, Inc., in 1924, which increased to 1.7% in 1927. Jewel Tea Company, Inc., by contrast is reputed by Standard Statistics Company as having saved 8.51% of gross income for net profit in 1926 and 8.56% in 1927.

MARGIN OF PROFIT BY REPRESENTATIVE CONCERNS IN DIFFERENT LINES

No. of Cos.	GROUP	% of Gross Saved for Net 1926	1927
4	Office and Business Equipment and Supplies	16.6	17.7
9	Sugar	7.3	14.3
2	Electrical Equipment	12.4	13.1
8	Chemicals (industrial)	12.2	12.0
9	Machinery and Equipment	12.8	12.0
6	Household Products & Supplies	8.8	10.4
18	Food Products	9.5	10.2
4	Shoes	8.3	10.2
9	Steel and Iron (excl. U. S. Steel Corp.)	11.0	9.9
11	Building Equipment and Supplies	10.2	9.9
10	Miscellaneous Manufacturing	8.2	9.0
4	Automobile Tires	7.2	8.4
5	Automobile Parts and Accessories	7.6	8.3
4	Theatres, Motion Pictures and Amusements	11.7	8.1
24	Oil	15.3	7.9
4	Cotton Goods	1.8	7.6
39	Retail Trade	6.9	7.4
5	Apparel	7.4	7.1
14	Automobiles (excl. General Motors Corp.)	9.1	6.3
4	Copper	9.7	5.9
5	Shipping and Shipbuilding	1.7	4.1
7	Miscellaneous Services	1.9	2.1
7	Coal	5.1	d3.7

d Deficit.

This same analytical measure when applied to various lines of industry has been summarized in a table which is reprinted by courtesy of the Standard Statistics Company.

"In view of the preceding discussion, analysis of this table becomes superfluous. The same factors which control the margins of individual concerns likewise control the margins of leading groups of concerns.

"There has always been, in the past, a general long-term tendency to over-capitalize, and to set up conditions of over-development and over-competition, in lines of industry which habitually return the widest margins of profit."

13. Profits on Net Worth or Earnings on Invested Capital. A further test of over-capitalization will be found in the relation of profits on net worth or invested capital. By utilizing the balance sheet form of analysis as described in Chapters III and IV, it will be found that an accurate determination of the invested capital of an enterprise may be readily obtained. Furthermore, an analysis of net worth is obtained on the basis of tangible as well as intangible assets. Thus this ratio is divided into two parts:

1. Ratio of net profit to total net assets or net worth including goodwill and other intangibles. The Jones Brothers Tea Co. has shown a very low percentage earned on its net worth for 1923 and 1924, which after payment of dividends has resulted in deficits. This, however, has improved to 3.1% in 1925, 6.1% in 1926, and 7.5% in 1927. Throughout the entire period of the last five years earnings on invested capital or net worth have been inadequate.

2. Ratio of net profit to net tangible assets or net worth excluding intangibles.

This latter ratio in contrast to the former shows some improvement, and while a 4.21% is shown for 1923, it had dropped to 2.96% in 1924. The company was able to earn 5.1% in 1925, 9.5% in 1926, and 11.4% in 1927. In each case there is consid-

erable spread between the two ratios and the degree of such spread is indicative of the extent to which the enterprise is over-capitalized.

Frequently, however, it will be found in companies such as Canada Dry Ginger Ale, Inc., Coca-Cola Co., Gillette Safety Razor Company, and others, that in spite of a high valuation of intangibles, the percentage earned on both net worth or invested capital, including as well as excluding intangibles, justifies the existence of the goodwill. The tendency, however, has been to write off entirely such intangibles, or carry them at $1. This procedure was adopted between the years 1926 and 1927 by Gillette Safety Razor Company and Canada Dry Ginger Ale, Inc. Coca-Cola continued to carry as of December 31, 1927, a goodwill or intangible asset account of $20,745,676. However, this company earned 26% on its net worth including intangibles, and 64% on its net worth excluding the goodwill item, which indicates a high level of earning capacity. Moreover, the above percentages are based on net worth excluding over $5,000,000 of reserves for taxes and contingencies, part of which may represent substantial hidden values. While goodwill under such conditions is justified from the standpoint of earnings, it is of interest to note the conservative attitude taken by the F. W. Woolworth Company in which $49,999,999 of goodwill was written off between 1922 and 1925.

An excellent analysis of earnings on invested capital by the Standard Statistics Company indicates a wide variation in the per cent earned on invested capital. The Lambert Company is reported as having earned 181.1% on its invested capital in 1927, while the Graham-Paige Motors Corporation showed a deficit of 35.4%. Jewel Tea Company, Inc., earned 30.8% in 1926 and 28.2% in 1927. Of the various groups it was found that nine companies representing the drugs, medicines and cosmetic trades earned the high average of 20.77% in 1926 and 22.22% in 1927. A low ratio group is represented by 3 fertilizer

companies that showed 3.82% in 1926 and a deficit of 1.39% in 1927.

Certain conclusions have been reached as a result of this study and the following are of particular interest.

"Thus it is clear that at all times the basic nature of the normal capital requirements in a given line of business, along with trade conditions in that line at any given time, constitute two of the main determinants of the earnings which the leading concerns in that line will return upon their invested capital. These same factors likewise tend to expand or to limit the earnings on invested capital by the most successful concerns in each line: an individual concern operating in a depressed trade, or in a trade which normally required a large invested capital, is an exceptional concern rather than average one if it can return conspicuously high earnings.

"Not always, but in the majority of cases, those corporations which succeed in winning the widest margins of profit likewise show the greatest earnings on invested capital, and vice versa. Notable exceptions are to be found in such instances as Retail Trade and Meat Packing, where the volume of business and the rapidity of turnover compensate for low margins.

"On the average, it is true that a high rate of earnings on invested capital constitutes an earmark of a concern which is commercially successful if judged on Any Other economic basis.

"Conversely, it is true on the average that a low rate of earnings on invested capital suggests a concern which is meeting with economic difficulties and disappointments.

"In either case, the situation may be temporary. It is the function of careful security analysis to forecast in this respect. And we believe that the foregoing analysis makes clear the fact that no forecast of an individual corporation's prospect carries much force unless it rests upon a forecast of the outlook for the line of business in which that corporation is engaged."

14. Net Worth Invested in Fixed Assets.—This ratio is readily obtained as a result of the 100% vertical analysis with total net assets or net worth used as the 100% base. Such a ratio varies greatly with the nature of the business and a steel company requiring large investments in fixed assets would show a high percentage of net worth invested in fixed assets.

The Jones Brothers Tea Company shows percentages of net worth so invested of 10.7% in 1923 increasing to 21.8% in 1927. However, on the horizontal percentage trend basis the amount invested in fixed assets in 1927 is only 75.2% of that in 1923. Net worth, however, in 1927 was only 36.8% of that in 1923 after giving effect to the recapitalization. On the basis of the comparative analysis there does not appear to have been a material over-expansion of fixed assets and on the contrary a liquidation policy has been profitably pursued.

15. Net Worth Represented by Quick or Current Debt.—This ratio is again readily obtained from the vertical percentage analysis of the balance sheet. Total current liabilities range from 18% of net worth in 1923 to a high of 34.4% in 1924 and 33.8% in 1927. This is increased for the ratio of total debt to net worth by a small amount of purchase money mortgages in 1924 and 1927 of about 1½% of net worth.

This ratio again will vary widely depending upon the nature of the business, and in the analysis made by the National Credit Office automobile finance companies show 386% of net worth as represented by quick debt.

Jewel Tea Company, Inc., at December 31, 1927, had 36% of net worth represented by quick debt.

16. Net Worth Represented by Total Debt.—In contrast to the ratio of quick debt to net worth, the ratio of total debt to net worth indicates the extent to which the enterprise is operating on borrowed capital of both a long and short-term character. The difference between these two ratios or a ratio of net worth to funded or long-term debt indicates roughly the extent to which

the enterprise is dependent on short-term credit provided either by the commercial banker on notes payable or by the concern's trade creditors.

A wide variation will be found in the ratio of net worth to total debt, and such a ratio will vary according to the nature of the business conducted. Thus, a public utility or railroad may frequently show total debt made up principally of long-term funded debt as high as 75% or 80% of net worth, or even in excess of net worth, without being financially embarrassed, and as has been previously pointed out, automobile finance companies indicate total debt of 386% of net worth. Southern woolen cloth manufacturers, on the other hand, showed for 1927 an average of 20% of net worth as represented by total debt.

Jones Brothers Tea Company had according to the balance sheet analysis 18% of net worth represented by total debt, and this percentage increased to 35% in 1927, most of which, however, was represented by current liabilities or quick debt.

The Belding-Heminway Company, on the other hand, is illustrative of the opposite condition, and in 1925 had 61.05% of its net worth represented by total debt, of which 52.66% was funded in the form of 6% convertible gold notes and 8.39% was in current liabilities with no floating indebtedness to the banks. This ratio of net worth to total debt was reduced to 36.27% largely through purchase by the company of its convertible notes in the open market at a discount.

Such companies as Jones Brothers Tea and Jewel Tea should show a relatively low ratio of total debt to net worth in view of the nature of their business, and having a proportionately small amount of capital invested in fixed assets, will normally show a very low ratio of net worth to funded or long-term debt.

17. Book Value of Common Stock.—Book values for industrial common stocks generally are of little value except as a possible working basis for the analysis of intangibles or for the determination of values in liquidation. Wide variations will be

found to exist between the book and market values of common stock, and one bears little relation to the other. Thus it will be found in cases of a heavy investment in fixed assets that the common stock may sell considerably below its book value. Bethlehem Steel common has a book value of approximately $170 a share and sold in October, 1929, for less than one-half of this amount, or about $80 a share. General Motors, on the other hand, had a book value of approximately $32 a share with a market value in the neighborhood of $200 for the old stock prior to the last split-up.

Book value should be figured on the basis of tangible as well as intangible values. The degree of spread in these two values is indicative roughly of the degree of over-capitalization. This is strikingly illustrated in 1923 for Jones Brothers Tea with a book value or net tangible asset value, excluding intangibles of 85 cents per share in contrast to $107 per share for book value in terms of total net assets or net worth including goodwill and other intangibles. In the year 1924, after the change to a no-par-value basis, this over-capitalization appeared to persist with values of $7.50 per share including intangibles and a deficit of $7.04 per share excluding goodwill. However, by 1927 the spread continued to persist and the book value including intangibles had increased to $16.13 per share, whereas the net tangible asset value still stood at a deficit now amounting to $2.29 per share.

For Jewel Tea Company book values including and excluding intangibles from 1923 to 1927 were as follows:

Book value at.....	1923	1924	1925 *	1926	1927
(a) Including intangibles..	$98.33	$105.45	$9.87	$12.88	$17.67
(b) Excluding intangibles .	$ 2.63	$ 4.72	$7.28	$10.93	$15.55

* Stock of $100 par exchanged for stock of no-par—share for share.

From a study of the ratios as developed for Jones Brothers Tea Company and in comparison with Jewel Tea, it is evident that a condition of over-capitalization persisted even after the readjustment in 1924 in which the $100 par value stock was

changed to no par and $9,482,512 of goodwill and other intangible assets were written off. This continued over-capitalized condition, together with an excessive cost of doing business and a lack of increasing gross business, especially in contrast to other similar types of enterprises in the field, may be regarded as the important causes leading up to the second readjustment in 1928, and the formation of the new Grand Union Company. The comparative ratios as developed seem to a certain extent to have forecast this recapitalization as early as 1925.

18. Ratio of Funded Debt to Total Capitalization.—This ratio is of almost no importance in this particular type of industrial enterprise in which no funded debt exists other than a small amount of purchase money mortgages in 1924 and 1927. With enterprises of a mercantile or trading type, as well as manufacturing enterprises of a limited fixed asset investment, little or no funded debt will ordinarily exist. In such cases where it does exist, debenture securities, frequently convertible issues, will appear and as soon as practical these long-term obligations will be retired or converted, thus freeing the enterprise of funded debt. In 1928 a greater volume of stock financing was carried out as has generally been seen in past years and it appears that the investor, more than ever before, now demands an equity position in the company whose securities he buys.

For industrials in contrast to railroads and public utilities, a normal ratio of funded debt to total capitalization would be from 25% to 35%. This, of course, means that long-term or funded debt representing mortgage or debenture bonds and purchase money obligations not maturing during the current year comprise 25% to 35% of the total capitalization representing capital stock and surplus including any fictitious reserves which may be regarded as merely segregated or hidden surplus. Capitalization in this sense becomes essentially net worth. Sometimes the ratio of funded debt to capital only as represented by preferred and common stocks is derived, although the banker generally regards

capitalization as comprising all of the long-term obligations as well as the net worth representing capital inclusive of surplus.

For railroads and public utilities this ratio will range between 60% and 70% or even higher. Thus in 1923-1924 the New York Central Railroad Company increased its dividend rate from 6½% to 7% to encourage conversions and later to 7½% in 1927 and 8% in 1928. The ratio of funded debt, exclusive of equipment trust obligations, to total capitalization at December 31, 1923, was approximately 64%. As of December 31, 1927, this ratio had been reduced through conversions of the convertible 6% gold debentures of 1935 as well as the sale of additional capital stock and redemptions to 49%. The ratio of funded debt to total capitalization in some of the representative steel companies is indicated in the following table:

U. S. Steel *		Youngstown Sheet & Tube	
Bonds	22%	Bonds	37%
Stocks	49%	Stocks	44%
Surplus	29%	Surplus	19%
Bethlehem Steel		Ludlum Steel	
Bonds	35%	Bonds	23%
Stocks	45%	Stocks	38%
Surplus	20%	Surplus	39%

Inland Steel

Bonds	34%
Stocks	40%
Surplus	26%

* Before issuance of rights and retirement of debt in the fall of 1929.

19. Percentage of Net Profit Carried to Surplus.—One of the most valuable ratios in the analysis of industrials will be found in the relationship of net profit to dividends and surplus. This is best expressed by a percentage of net profit carried to surplus or reinvested in the enterprise. Such a ratio has a most important bearing on the market price of the companies' securities and at the same time is extremely difficult to derive as an accurate figure due to the lack of uniformity in accounting procedure. Some companies are generally regarded as having an unusually liberal dividend policy which in turn offsets the percentage of

net profit (after adequate rather than excessive reserves and write-offs) carried to surplus. Jones Brothers Tea Company, as indicated in the comparative income account, paid out $300,000 in cash common dividends in the face of a $100,000 deficit in 1923 and for both 1923 and 1924 paid preferred dividends much in excess of net earnings.

The Belding-Heminway Company, it will be noted in Figure 33 (page 224), paid out common cash dividends considerably in excess of earnings during 1926, 1927, and the first quarter of 1928, after which time they were finally passed. While extenuating circumstances sometimes exist such as to make the temporary payment of dividends in excess of earnings advisable, such action cannot be usually continued without eventual serious loss to the company. It may be concluded that the average industrial over a period of years cannot safely pay out in cash dividends greater than 60% of its net profits. Therefore, from 40% to 50% should be carried to surplus and reinvested in the business.

In a recent study by the Standard Statistics Company, distribution of net profit for a large number of industrial concerns was summarized as follows:

Distribution of Net Profit	1926 %	1927 %
Consumed by fixed charges	10	10
Consumed by preferred dividends	10	10
Consumed by common dividends	45	55
Consumed by miscellaneous charges and adjustments	5	5
Theoretically available for surplus	30	20
Total	100	100

In further developing this interesting study, the Standard Statistics Company summarized in the table in Figure 23 the percentage of net profit paid out in cash dividends in 1927 by various groups of industrials. From the table it is evident that the coal and fertilizer groups respectively at the top and bottom of the list are representative of those industries showing poor

PERCENTAGE OF NET PAID OUT IN COMMON DIVIDENDS IN 1927 BY VARIOUS GROUPS

No. of Cos. Included	Industry	% of Net for Common Dividends
11	Coal	109.40%
17	Copper	81.80
51	Oil	81.40
7	Lead and Zinc	74.60
3	Meat Packing	70.60
9	Drugs, Medicines, Cosmetics, etc.	69.60
17	Tobacco Products	66.40
6	Electrical Equipment	65.40
24	Machinery and Machine Equipment	65.40
13	Railroad Equipment	64.90
22	Automobile Parts and Accessories	64.50
33	Miscellaneous Manufacturing	61.90
14	Chemicals (Industrial)	61.30
23	Automobiles (excl. General Motors)	59.10
14	Household Equipment and Supplies	58.05
24	Automobiles (incl. General Motors)	57.80
36	Food Products	57.30
14	Misc. Mining and Smelting	54.60
31	Building, Equipment and Supplies	54.00
51	Retail Trade—Chain and Dept. Stores, etc.	41.60
13	Sugar	39.90
14	Theatres, Moving Pictures and Amusements	38.40
13	Apparel	38.10
7	Office and Business Equipment and Supplies	37.70
22	Steel (incl. U. S. Steel)	36.30
7	Leather and Shoes	36.30
14	Miscellaneous Service	35.11
4	Woolen Goods	34.80
4	Silk Goods	30.90
7	Paper	25.90
7	Cotton Goods	24.40
21	Steel (excl. U. S. Steel)	24.30
8	Radio and Musical Instruments	23.90
7	Agricultural Implements	22.00
7	Shipping and Shipbuilding	21.80
9	Automobile Tires	9.49
3	Fertilizers	Deficit

Figure 23. Analysis of Distribution of Net Profit in Common Dividends by Trade Groups (compiled by the Standard Statistics Company)

financial results in 1927. In the first instance coal companies having paid dividends had to do so partly out of surplus, while in the case of the fertilizer companies which have shown only a small net profit, if any, have failed presumedly to pay dividends. In the case of 9 automobile tire companies which paid only 9.49% of net profit in common dividends in 1927, it is evident by using a reciprocal of this percentage that 89.51% of net profit was carried to surplus. This may be readily understood in view of the generally unsatisfactory conditions prevailing in that industry for the most part of 1927.

Finally, it may be concluded that the percentage of net profit carried to surplus or paid out in common dividends will depend to a great extent upon the nature of the industry, its degree of stability of earning power, and the character of its capital structure. In this latter connection, it is observed by the Standard Statistics Company as follows:

"The character and long-term experience of a given industry are quite influential in determining the capital structure of the average corporation operating in that industry. It goes without saying that, in times of business depression, when net profits are shrinking, common dividends in lines of business which have resorted less generously to the bond and preferred stock markets are, on the average, the more likely to be maintained."

The trend of general business conditions appears to be an important factor in the question of dividend policy, and this has been strikingly illustrated in the analysis of the composite income account for the years 1926 and 1927 as developed by the Standard Statistics Company, a brief summary of which follows.

"Holders of industrial common stocks apparently received more money in the form of cash dividends in 1927 than in any previous year.

"Total payments of our 545 companies, amounting to more than 1⅓ billions, were 7.6% greater than in 1926. And previous calculations made by the Standard Statistics Company had

indicated that 1926 industrial common dividends established a new record to date.

"The greatest surprise in our composite earnings statement comes with the disclosure that the amount carried to surplus last year, after all payments to security holders had been made, was in the aggregate 45% smaller than in 1926 in the case of 545 companies, and was almost 57% smaller in the case of 543 companies (omitting General Motors and U. S. Steel). The 545 companies carried only 19% of their 1927 net profit to surplus; the 543 companies only 17%.

"The explanation is obvious: lower profits, higher fixed charges, higher common dividends.

"Over a period of years, we believe that it would be an extremely dangerous program for American industry to pay out 80% or more of its net profit to security owners, as our 545 leading concerns did in 1927. A margin considerably greater than 20% should be saved: (a) against future evil days; (b) for improvements and expansion.

"But we find little that is alarming in this particular situation as applicable to the year 1927. Four or five years of good average earnings preceded 1927; considerably more had been carried to surplus in each of these previous years than was so carried over in 1927. The financial position of the average large industrial concern was not weak in 1927, but extremely strong.

"Moreover, cash on hand increased substantially during 1927; property value increased at about the normal annual rate; inventories were about stable.

"And further, there are a number of important American industrial concerns (although this group is quite in the minority) which have now become, for all practical purposes, "finished products." Expansion programs which in some cases have been in the process of development over a period of twenty years or more have been very nearly completed. Although large appropriations for depreciation and renewals must be set aside in the future, it still remains true that some concerns have made so

much progress with their expansion programs that they will be able, with entire conservatism, to consistently pay higher returns to their common stockholders during, say, the next decade than they have been able to pay during the past decade.

"Much depends upon the position of the individual concern. But certainly it may be set down as a basically sound assumption that the AVERAGE American industrial corporation cannot, with safety, retain no more than 20% of its net profit over a period of years. A certain number of particularly fortunate and successful concerns can do so. But they constitute the exception rather than the average.

"If as prospective security purchasers we were analyzing the long-term earnings records and financial policies of a given group of industrial concerns, we should certainly scrutinize with the greatest care that concern which had retained no more than 20% of its earnings over a period of time, and as a general proposition we should lodge still greater confidence in the position of the concern which customarily retains more than 30% of its net.

"On the face of the facts it is in most cases, although not always, a bad sign if a given industrial concern does not feel the need of retaining more than 30% of its net profit, because this in itself is an indication that future expansion probabilities are limited. At the same time, it is a bad sign if a concern needs to retain more than 30%, but fails to do so. As suggested above, there always will be exceptions to this generality; the fact that there are such exceptions does not obviate the necessity for striving to determine whether each exception is justified."

20. **Earnings.**—Ratios measuring the earnings available to fixed charges or preferred dividend requirements and the amount earned per share of common stock outstanding may be indicated as follows:

(a) Times earned fixed charges
(b) Times earned preferred dividend requirements
(c) Dollars earned per share of common stock outstanding

(a) Times Earned Fixed Charges. The difficulty of setting any standard ratio of the number of times fixed charges should be earned for industrials is strikingly illustrated by the analysis developed by the Standard Statistics Company. Thus it was found that the General Baking Company with only about $10,000 of fixed charges in 1927 earned these charges 775 times, while the Union Carbide and Carbon Co. earned $1,200,000 of fixed charges 22.1 times. Louisiana Oil Refining Company, on the other hand, with $100,000 of fixed charges, earned these charges only 0.6 times, or in other words, earned only $60,000, which was $40,000 less than their indicated fixed charges.

Care must be exercised in deriving as well as in interpreting such a ratio as times earned fixed charges, as it is readily seen from these illustrations that much depends on both the amount of fixed charges involved as well as the number of times earned. Therefore, Bethlehem Steel earning $11,460,000 of fixed charges 2.38 times may show a more satisfactory condition than the Colorado Fuel and Iron Company earning $1,720,000 of fixed charges 2½ times, although in neither case were the common stocks on a dividend basis at that time.

The average number of times earned fixed charges for 273 companies with funded debt in 1926 was 6.58, and in 1927, 5.25 times. These ratios must be considered in the light of both stability of earning power as well as adequacy, and an industrial showing a high stability of earning power can very satisfactorily show a ratio of three times or sometimes even less, and still present an adequate degree of safety of interest return to its bondholders. Finally, it may be reasoned that the bondholders' real safety lies more in the adequacy and stability of times earned fixed charges than in the amount of assets per bond. Asset security represents a negative rather than positive type of safety and represents a purely secondary line of defense, particularly in the event of financial embarrassment or bankruptcy.

In the Jones Brothers Company a ratio of times earned fixed

charges has been figured on the basis of the total amount of "other charges," "interest," and "taxes" paid as representing fixed charges, even though no funded debt exists. Interest in these cases represents current interest paid on bank loans and other current indebtedness. This ratio has steadily improved from 2.04 times in 1924 to 15.3 times in 1927.

(b) Times Earned Preferred Dividend Requirements. From 1923 to 1927, there was $3,760,000 of 7% cumulative preferred stock of the Jones Brothers Tea Company outstanding with an indicated requirement exclusive of sinking fund provisions of $263,200. This was evidently paid in 1923 but reduced and finally passed in 1924. Based on earnings, the preferred dividend requirement was not earned until 1926 and 1927, when a ratio of 1.18 times and 1.53 times the requirement was shown. Dividends were not paid and the entire net profit was carried to surplus. By 1926 it was evident that it would only be a matter of time before some reorganization and recapitalization would be necessary. Accordingly, in 1928 a plan was proposed whereby arrearages of $1,907,000 on the preferred could be cleared up. In addition to the current requirements the preferred stock provisions required that $500,000 be set aside annually as a working capital fund as long as the preferred stock remained outstanding, and until this was done no dividends could be paid on the common. It is evident from an analysis of the various working capital ratios that the company was short of working capital even though this requirement could have been met, which as a matter of fact had not been complied with. By March 22, 1928, application had been made to the New York Stock Exchange for the listing of the certificates of deposit in connection with a plan of readjustment. By June, 1928, the Grand Union Company had been formed and the exchange of the Jones Brothers Tea Company, Inc., share for share of the Grand Union Company, effected.

Preferred dividend requirements on industrials generally over

a period of years should be earned at least three times. Again, such a ratio depends largely on the stability of earning power.

Jewel Tea Company in comparison showed preferred dividends of $650,675 earned 1.91 times in 1926 and $551,775 earned 2.28 times in 1927. Further substantial progress was made during 1928.

(c) Dollars Earned Per Share of Common. This ratio is the best measure, under normal market conditions, of the worth of the common stock. Indicated earnings per share, however, will vary widely with accounting procedure as influenced by financial policy in the treatment of reserves, write-offs and inventory and other asset evaluations.

On the basis of the indicated figures a deficit of approximately $1 per share was shown in 1923 by the Jones Brothers Tea Company, thereafter improving to a profit of about $1.40 in 1927. This improvement, while not as satisfactory as could be desired, was a factor in making possible the recapitalization in 1928.

Jewel Tea Company in contrast is reported in Moody's Industrial Manual as having common share earnings as follows:

Years Ended	Dec. 29, 1923	Dec. 27, 1924	Jan. 2, 1926	Jan. 1, 1927	Dec. 31, 1928
Earned per share of common *	$4.82	$5.00	$5.14	$8.89	$9.05

* After deducting current preferred dividend requirements only and not accumulations. Prior to 1924 based on $100 par value.

Obviously no standard ratio can be set for the earnings per share of common stock in industrial enterprises. Perhaps all that can be hoped for in the future is a certain minimum standardization of accounting terminology and procedure, so that a reasonably true ratio of earnings per share can be obtained.

With rapidly changing capitalizations earnings per share are frequently shown on the basis of the average number of shares of common outstanding. Earnings and dividends in per cent have long since been discarded in view of the large number of no-par-value shares outstanding. On such types of stock, earn-

ings and dividends can only be intelligently shown in dollars and cents per share.

21. Market Price of Securities.—In the final analysis the market price of a given security is the determining basis of value. During the past year it may be argued that market values, by means of wider public participation, pool operations, and countless other factors, have been forced up far beyond intrinsic values. This condition, temporary or perhaps otherwise permanent to a degree, does not alter the fact that value, based on exchange, stands as the determining factor in the definite appraisal of a share of stock or a bond. A familiar ratio extensively used in determining the price of a stock is represented by the fact that a stock should sell at a figure of approximately 10 times its earnings per share. Thus a stock with earnings of $5 per share should theoretically sell at $50 per share. Both elements, however, used in determining this ratio are purely relative. First of all, earnings per share may be almost impossible to determine with any real degree of accuracy. In the second place, this theoretical earnings ratio seems to have been altered because of an excessive discounting of future earnings, pool operations, and technical market conditions, so that stocks during the years of 1928 and 1929 until the drastic break in prices, have been selling at prices 15, 20, 30 times earnings.

The following list of stocks has been taken at random and 1927 earnings per share have been compared with the high market prices for 1927 and 1928. This limited computation serves to illustrate the wide variation in market price as related to the number of times earnings per share.

It appears fairly evident that stocks have consistently sold much higher in 1928, partly due to improved earnings as well as the more intensive and widespread speculative interest in the market. Whereas a ratio of 12 to 15 times earnings may be characteristic in 1927, it appears that a ratio of 15 and 20 times earnings is more typical of 1928.

WIDE VARIATIONS IN PRICE RATIOS

STOCK	Earned per Share 1927	Market Price and Times Earned per Share			
		1927 High	No. of Times	1928 High	No. of Times
New York Central	$15.28	171½	11.2	196½	12.9
Missouri Pacific *	.98	62	63.3	76¼	77.8
American Tel. & Tel.	11.76	185½	15.8	211	17.9
International Tel. & Tel.	11.07	158⅞	14.4	201	18.2
Atlantic Refining	1.83	41⅝	22.7	66½	36.3
General Motors	12.97	141	10.9	224¾	17.3
Detroit Edison	11.32	170½	15.1	224¼	19.8
Bankers Trust Co. N.Y.†	47.28	1,000	21.2	1,330 (old)	28.1
				1,150 (new)	24.3
St. Louis & San Francisco R.R.	11.29	117¼	10.4	122	10.8
National Biscuit	7.11	187	26.3	195¼	27.5

* Flood year—earnings abnormally low.
† Capital increased by issuance of rights from 20 millions to 25 millions.
Earnings and Prices from Moody's Manuals and the Times Annalist, 1928 and 1929.

In the case of Jones Brothers Tea Company, it is clearly evident that at times the market price has closely approached a possible liquidation or receivership value. Where there is little in the way of favorable prospects, the theoretical ratio of market price representing times earnings per share is of little significance.

From the limited discussion of ratios which in itself is a comprehensive study of very substantial proportions certain broad conclusions may be reached.

1. Ratios in themselves as exact measures of financial performance are of little value.

2. Ratios must be carefully selected and used with great care for purposes of broad comparative analysis only.

3. Ratios should be as simple in name and construction as possible.

4. Ratios can only be used successfully as indicators of possible existing industrial ailments which can then be determined and corrected only by the most comprehensive analytical methods.

CHAPTER VIII

THE TECHNIQUE OF PRELIMINARY ANALYSIS

Having completed the technical background of industrial statement analysis, it is appropriate to consider the application of the principal methods of industrial analysis. The Preliminary Analysis is made to determine whether or not an industrial situation is satisfactory in a general way before time and money are spent in undertaking a final or Complete Analysis. The investment banker, the large investor, and the capitalist, all use the Preliminary Analysis.

The Preliminary Analysis is made to determine the "external characteristics" of a given situation and is designed to answer the following questions:

1. Is the enterprise acceptable as to size and quality?
2. Are its general characteristics such as to make it acceptable?
3. Has the company the capacity to make and sell a commodity?
4. What is the measure of the company's willingness and capacity to pay?
5. What is its value in case of forced sale or liquidation, in the event of its willingness but incapacity to pay?

Is the Enterprise Acceptable as to Size and Quality?—This is readily determined from an examination of the company's history and volume of business. It is a question of major importance, because a loan of $1,000,000 might be turned down by an individual capitalist because it is too large, or, on the other hand, rejected by a large investment banker as being too small. Furthermore, many bankers confine their operations to certain industries, and many refuse to finance the extractive industries, such as coal mining, oil and the like, and yet are willing to do other industrial financing. In a similar way the investor, whether

large or small, should have certain rules by which his investments are governed. Thus, a very wealthy man might make sizable commitments in securities that have practically no market, whereas the smaller investor would necessarily have to keep his funds more liquid and so buy into issues that have a ready market.

Are Its General Characteristics Such as to Make It Acceptable?—This involves a more detailed appraisal of the business in order to determine its general fitness for investment financing or for the capital commitment by a large investor. Frequently, for example, a piece of business is found acceptable as to size and quality by a banker but it is rejected because his sales organization cannot handle securities of this particular type. This step consists of a measurement of the business in terms of investment requirements. Here again the investor or the banker is governed by policies, and in some cases by legal requirements. Thus the trustee of a certain trust fund might be prevented from buying the preferred stocks of a very sound industrial enterprise. Similarly, certain types of banks, particularly savings banks, would be legally restricted to the purchase of only the senior securities of a given company and would not make equity commitments even if the business were acceptable as to size and character.

Has the Company the Capacity to Make and Sell a Commodity?—This implies an analysis of the company's productive plant capacity as compared with sales. A detailed comparative analysis of the profit and loss statements in relation to productive capacity determines the degree of balance in the enterprise, as is explained in more detail in Chapters IV and IX.

The prime function of all industrial companies is to make and sell a commodity or series of commodities. It is, therefore, absolutely important that the company be equipped from a productive standpoint to make a certain volume of goods and further that it be equipped from an organization standpoint to sell that quantity of goods.

An illustration in point would be a new airplane manufactur-

ing company. At one time in this field of business, orders were readily obtainable but the manufacturing problem for a new company became quite difficult. Thus, a company might readily have obtained orders for three planes a week. However, the problem that confronted a company was the delivery of sufficient raw material, delivery of sufficient motors and instruments, and the acquisition of a sufficient number of skilled mechanics to make that quantity of airplanes.

What Is the Measure of the Company's Willingness and Capacity to Pay?—The company's willingness to pay constitutes its moral obligation. Unless the business comes highly recommended it is necessary to check the management from a standpoint of integrity and character and its past record in meeting its obligations. Having evaluated the character factor, a further analysis should be made of the profit and loss statements to determine whether the margin of earnings is sufficient to support the financing in question. This can easily be accomplished by a study of the historical earnings of the company in order to determine the amount of those earnings and the margin by which they exceed the stipulated requirements of the securities, such as bonds or preferred stock. Estimates of future earnings should be based upon the historical performance and should in all cases be conservative. It is necessary to interpret properly the historical earning statements to make sure that adequate deductions have been made for depreciation and depletion.

What Is Its Value in Case of Forced Sale or Liquidation, in the Event of Its Willingness but Incapacity to Pay?—This step involves a fairly detailed equity analysis of the balance sheet in order to determine the margin of security in case the company should be forced into a position of financial embarrassment, receivership, or bankruptcy. In the case of bond financing, particular attention must be paid to the nature, maintenance, and basis of valuation of fixed assets used as security for a loan extended.

The company's capacity to pay in the event of liquidation can be determined by taking the book value of the stock after all the asset accounts have been properly discounted. In other words, accounts receivable may not all be collected, nor may notes receivable be collected in full. The plant in a forced sale would probably bring a very small part of its book value, possibly not in excess of 30% of its value to a going concern. The deferred items are generally all eliminated in liquidation. Some of the prepaid expenses may be recovered. In this way a liquidation value for stock or bonds can be determined so as to provide a fairly accurate measure of the company's capacity to pay in the event of liquidation or dissolution.

Preliminary Analysis Illustrated—Colorado Fuel & Iron Company

Having briefly described the various steps of the Preliminary Analysis, it is appropriate at this point to review a typical case throughout the various steps of such an analysis. For this purpose the Colorado Fuel & Iron Company is analyzed. The financial records and general history of this enterprise are published in the various statistical services.

History.—The Colorado Fuel & Iron Company was incorporated under the laws of Colorado on October 21, 1892. Subsequently many acquisitions were made until the company reached its present size.

The company is the largest steel manufacturer in the West. Its main plant is situated at Pueblo, Colorado. This plant has an annual capacity of 550,000 tons of finished steel products. It has sources of raw material in iron mines in Wyoming, Colorado, and New Mexico. Among its 25 coal mines are the only anthracite mines west of Pennsylvania. The company operates its own coke ovens, and in addition it has certain undeveloped iron, coal, agricultural, timber, and fire clay properties.

A development program inaugurated several years ago is now practically completed. The company's plants are fully electrified resulting in a considerable reduction in operating costs. While production is diversified to a certain extent, rails represent the major portion of the finished product. In recent years the sale of miscellaneous products has been further increased.

In addition to the above information there have been set up the comparative balance sheets of the company for the years of 1923-1927 inclusive (Figure 24). They have been set up in what is known as a liquidity form because in this manner they lend themselves more readily to Preliminary Analysis. The horizontal trend method of comparative analysis is used.

Reference to the comparative balance sheets will show that the trend has been computed since 1923, on each individual item. This is done by arbitrarily choosing the year 1923 as a base. Thus the cash account increased 162% in 1925 but fell down 43% in 1927. Similarly the trend of each item can be checked. It should be kept in mind that these figures are those provided by the individuals presenting the company's case and are being used as the available facts for the purpose of a Preliminary Analysis. They have been taken from the usual published sources and have been deliberately condensed and consolidated to represent the inadequate condition of figures usually presented under conditions of a Preliminary Analysis.

In a similar way the operating statements are summarized on a comparative basis (Figure 25). With the two sets of statements and the historical information, the Preliminary Analysis may now be made.

The Colorado Fuel & Iron Company does about $40,000,000 worth of business a year and has a fixed asset account of about $65,000,000. Certainly for purposes of investment financing a business of this size would be attractive. For the individual investor it might be too large, although he might be interested in taking a certain percentage of the bonds if the company were offering a bond issue. The business was incorporated in 1892

and is, therefore, sufficiently proved to give it stability. It is certainly not a new or untried venture. The coal, iron, and steel industries, being essential to the public welfare, are, therefore, more or less permanently part of the industrial structure of the country.

Are Its General Characteristics Such as to Make It Acceptable?—This would depend on the specific conditions involved in the particular deal. If the company wanted to borrow $1,000,000 for sixty days it would certainly interest the commercial banker. If the company chose to increase its funded debt $5,000,000, or to refund its three issues of bonds into one large issue of general mortgage bonds, the proposition might be attractive to the investment banker. The large investor might consider the purchase of certain securities of the company, such as its bonds, preferred or common stock.

In the history of the enterprise it is reported that the company is equipped to produce annually 550,000 tons of iron and steel products. We find that the company in 1926 and 1927 sold in excess of 500,000 tons. Obviously past performance indicates that the company has a fair balance between plant capacity and sales. The problem now resolves itself into an analysis of the financial statements.

The Balance Sheets.—In reference to the five-year comparison of the balance sheets (Figure 24), it will be noted that the year 1923 has been chosen as a base. This does not mean that 1923 was an average or representative year. It is not necessary in a Preliminary Analysis to determine an average or typical period, or construct what is known as the balance sheet or sales dollar of performance. It is of interest at this point to check the trend of the various items in order to determine the condition of the company. The cash account has dropped to 57% of what it was in 1923. The accounts and notes receivable have increased almost 50% in the face of about the same volume of business. This frequently is indicative of a poor collection policy. The

cash account is real, but we have no means of telling the condition of the receivables. It is also important to note that the company has increased its inventories 68% during an interval of generally falling commodity prices. During such a period it would be the general policy of the management of a successful company to keep its inventory at a minimum.

The fixed asset account indicates that up to 1925 the company carried its investments in subsidiaries in a separate account. In 1926 it apparently changed its method of accounting to consolidate the positions of its subsidiaries into one balance sheet. It will be noted that in 1926 the investment in subsidiaries disappears, but that the fixed asset accounts increase approximately a like amount.

The plant and machinery account is not segregated and the depreciation is not indicated in the submitted statements. Therefore, we cannot check the adequacy of the depreciation and depletion. The same is true of the account marked land which includes iron ore and coal deposits. It would seem that since the total account is practically unchanged, the company is either failing to charge off adequate depreciation or else is expanding or improving its properties, to an extent which will compensate for the difference in the total of the fixed asset account. This latter is probably the case, inasmuch as the history of the company tells us they have just completed a development program.

It would be proper at this point to check the value of the total fixed asset account by taking the plant capacity and multiplying it by the plant value in dollars per unit of manufacture for a steel and iron company. However, this cannot be done at this stage because the company has not provided the necessary details of its business, and it is not known how much business was done by the iron, fuel, and other departments.

The account marked "deferred items" has decreased to about 12% of what it was in 1923. This is merely a bookkeeping account, which simply carries the unused temporary assets. The company would normally amortize many of the items in this ac-

Colorado Fuel & Iron Company

CONSOLIDATED COMPARATIVE BALANCE SHEETS—YEARS ENDING DECEMBER 31, 1923 TO 1927

	Dec. 31, 1923	Base %	Dec. 31, 1924	% of 1923	Dec. 31, 1925	% of 1923	Dec. 31, 1926	% of 1923	Dec. 31, 1927	% of 1923
CURRENT ASSETS										
Cash	441,814	100	1,025,877	233	1,158,120	262	772,665	175	253,898	57
Receivables	3,248,360	100	2,908,369	90	4,759,263	147	4,857,867	149	4,815,786	148
Accounts Receivable (Subsidiary)	1,036,768	100	874,831	84	976,497	94	.....	0	.....	0
Government Bonds	1,567,859	100	1,567,859	100	1,567,859	100	1,115,947	71	.....	0
Inventories	6,066,294	100	6,582,448	108	5,964,105	97	9,273,871	153	10,114,452	168
TOTAL CURRENT ASSETS	12,361,095	100	12,959,384	105	14,425,844	117	16,020,350	130	15,184,136	123
FIXED ASSETS										
Machinery, Plant, Etc.	31,195,321	100	30,629,123	98	30,547,872	98	33,979,280	109	34,903,081	112
Land	23,076,360	100	23,024,316	100	23,735,848	103	30,563,080	132	30,094,722	130
Investments	11,400,952	100	11,577,408	101	11,287,727	99	.....	0	.....	0
TOTAL FIXED ASSETS (Net of Depreciation and Depletion Reserves)	65,672,633	100	65,230,847	100	65,571,447	100	64,542,360	98	64,997,803	99
Deferred and Accruals	1,170,656	100	1,497,011	128	1,506,020	128	483,227	41	146,495	12
TOTAL ASSETS	79,204,384	100	79,687,242	100	81,503,311	103	81,045,937	102	80,328,434	101
CURRENT LIABILITIES										
Accounts and Notes Payable	2,096,030	100	2,347,502	112	3,224,749	154	5,082,431	243	3,630,158	173
Accruals	761,375	100	749,426	98	745,914	98	1,544,105	203	1,391,742	183
Taxes and Dividends	475,768	100	475,768	100	986,871	207	1,377,278	290	1,343,226	282
TOTAL CURRENT LIABILITIES	3,333,173	100	3,572,696	107	4,957,534	148	8,003,814	240	6,365,826	191
FIXED LIABILITIES	36,875,000	100	36,912,000	100	36,719,000	100	33,945,000	92	33,299,000	90
Reserves	1,529,759	100	1,505,205	91	1,268,290	83	1,153,255	75	774,048	50
Preferred Stock	2,000,000	100	2,000,000	100	2,000,000	100	2,000,000	100	2,000,000	100
Common Stock	34,235,500	100	34,235,500	100	34,235,500	100	34,050,500	100	34,050,500	100
Surplus	1,230,952	100	1,461,841	119	2,292,987	186	1,893,368	154	3,839,060	310
TOTAL LIABILITIES AND PROPRIETORSHIP	79,204,384	100	79,687,242	100	81,503,311	103	81,045,937	102	80,328,434	101
WORKING CAPITAL	9,027,922		9,386,658		10,468,310		8,016,536		8,823,310	
CURRENT RATIO	371%		362%		292%		200%		237%	

Figure 24. Comparative Balance Sheets Prepared for Preliminary Analysis by the Horizontal Trend Method

count. Inasmuch as its reduction is a little more rapid than would normally occur, it might be advisable to determine which items in this account, such as organization and financial charges, are amortizable and which items represent prepaid self-consuming items, such as insurance and advertising.

It will be noted that the total assets of the company remain substantially the same. The company is about as large in volume of assets as it was in 1923. Its working capital position has not been materially improved. Its reduction in cash and the very considerable increase in receivables and inventory seem to indicate a tendency toward possible financial embarrassment.

On the liability side the notes and accounts payable have shown a 73% increase. We are unable to tell from the account whether these are due the banks on temporary borrowing or whether they are due for purchases of material. The accrued items show a very substantial increase, which might indicate that the company may be having difficulties in meeting its obligations as promptly as it should. With the tendency toward reduced federal taxes and with no increase in dividends, it is not apparent why this account should have increased 182%.

It is interesting to notice that while the current liabilities have increased 91%, the cash item has dropped and the total current assets have increased only 23%. The current ratio has dropped from approximately 3.80 in 1923 to 2.40 in 1927. The company apparently has not been able to maintain its initial strong current position due to the adverse factors as outlined.

The fixed liabilities are gradually being reduced. This is due to retirement of the funded debt. Whether or not this is compulsory would have to be determined from the sinking fund provisions on the three issues of bonds the company has outstanding. Without examination, we would imagine that a coal and iron mining company would have to pay to the sinking fund somewhere between 2 cents and 10 cents per ton for coal and iron mined, regardless of profit, the price being fixed by the valuation of the coal and iron in the ground. It is reasonable to assume

that this reduction in funded debt is compulsory because the company would endeavor to conserve its cash to improve its current position.

The reserves account is not described, but it is apparently an account covering reserves for contingencies such as might arise in a large business of this kind. The outstanding issues of common and preferred stock have remained unchanged.

There is an apparent increase in surplus of 210%. Whether this is real would depend upon a check of the fixed assets. It is easy to conceive of a case where a fixed asset account of $65,000,000 might be over-valued to the extent of this increase in surplus.

The working capital, which is computed by deducting the current liabilities from the current assets, shows a small decrease. However, this condition is more serious than the working capital figures indicate, because the individual current asset accounts are now not as liquid as in 1923. The current ratio, which is obtained by dividing the current assets by the current liabilities, also shows an unhealthy decrease from 371% to 237%; or in other words, there is now only $1.37 of invested working capital for every $1 of borrowed money, instead of $2.71, as in 1923.

The balance sheet analysis up to this point indicates that the size of the company has remained about the same, that its current position is not as substantial as it was, and in addition raises many questions that will have to be checked further, such as the condition of the accounts and notes receivable, the nature of and the reason for the increase of the inventories, the adequacy of the depreciation and depletion charges and causes for the sudden drop in the deferred and accrual items appearing on the asset side of the balance sheet. An explanation of the increase in current liabilities and many other details should also be obtained.

Profit and Loss Statements.—At this point it is advisable to examine the comparative profit and loss statements, as appearing in Figure 25. These statements are the measure of the company's earning power. Since the primary purpose of an industrial

corporation is to make money, the profit and loss statement at once becomes the most important record of the company.

The gross revenues have remained about the same. This account is the "net" gross revenue after deductions have been made for sales returns allowances, rebates, transportation deductions, and the like. In a period of relatively favorable business conditions such as is represented by the five years under review, it would seem that the company should have increased its volume of business. However, it must be remembered that commodity prices have been steadily declining and that the volume of business in 1927 probably represents a much greater actual tonnage than in 1923. Therefore, we cannot criticize the company too severely for its failure to increase its dollar sales until the tonnage item has been checked.

The operating expenses show a 5% reduction. This is desirable and particularly significant if the company has increased its tonnage business at the same time. This decrease of only 5% in the operating expenses has brought about a very favorable increase in the net operating income of 29%. It is quite unnecessary to point out the importance of keeping the operating expenses down.

Other income shows a slight decrease, but not sufficient to be alarming. This account includes such items as rents, interest, and dividends from non-operating activities. There appears no particular reason why it should show much fluctuation in an established company like the Colorado Fuel & Iron Company.

The total income shows an increase of 26% but taxes, depreciation, and depletion show a drop of 18%. Unquestionably the major portion of this account is depreciation and depletion. Under normal conditions, these items should not be decreased in view of what appears to be a slight increase in volume of tonnage produced. This condition is important, since the question was raised in connection with the balance sheet analysis, as to the adequacy of these reserve accounts. It also raises the question as to the accuracy of the record of earnings beyond this point.

Colorado Fuel & Iron Company

COMPARATIVE PROFIT AND LOSS STATEMENT—YEARS ENDING DECEMBER 31, 1923 TO 1927

	Dec. 31, 1923	Base %	Dec. 31, 1924	% of 1923	Dec. 31, 1925	% of 1923	Dec. 31, 1926	% of 1923	Dec. 31, 1927	% of 1923
Gross Revenue	38,656,580	100	39,297,320	101	34,537,135	89	35,758,040	92	38,262,869	99
Operating Expenses	34,105,937	100	35,145,960	103	29,166,542	85	29,794,206	87	32,355,728	95
NET OPERATING INCOME	4,550,643	100	4,151,360	91	5,370,593	118	5,963,834	131	5,907,141	129
Other Income	442,037	100	477,152	106	498,944	113	452,406	102	398,861	90
Total Income	4,992,680	100	4,628,512	92	5,869,537	117	6,416,240	128	6,306,002	126
Taxes, Depreciation, Etc.	2,440,353	100	2,295,414	94	2,327,497	95	1,860,274	76	2,012,885	82
Balance for Interest	2,552,327	100	2,333,098	91	3,542,040	138	4,555,966	178	4,293,117	168
Bond Interest	1,820,298	100	1,812,803	100	1,789,612	98	1,807,551	99	1,715,598	94
Net to Stocks	732,029	100	520,295	71	1,752,428	240	2,748,415	376	2,577,519	348
Preferred Dividend	160,000	100	160,000	100	160,000	100	160,000	100	160,000	100
Common Dividend	.....	...	.....	....	.....	...	.....	...	.....	...
TO SURPLUS	572,029	100	360,286	63	1,592,428	279	2,588,415	450	2,417,519	423
Previous Surplus	646,765		1,230,952		1,461,840		2,292,989		1,893,368	
Total Surplus	1,218,794		1,591,238		3,054,268		4,881,404		4,310,887	
Net Surplus (Debits or Credit)	12,158		129,398		761,281		2,988,036		471,827	
Surplus per Balance Sheet	1,230,952		1,461,840		2,292,987		1,893,368		3,839,060	
Operating Ratio	88%		89%		86%		83%		85%	
Times Interest Earned	1.40		1.28		1.93		2.52		2.50	
Earned per Share Preferred	36.60		26.01		87.62		137.42		128.88	
Earned per Share Common	1.67		1.05		4.65		7.60		7.10	

Figure 25. Comparative Profit and Loss Statements Prepared for Preliminary Analysis by the Horizontal Trend Method

In a land, building, and machinery account of over $34,000,000, a 1% gross depreciation would be $340,000. Obviously the equipment as a whole will not last for a hundred years. A rate of 5% would seem a minimum, which would bring the depreciation on the building and machinery alone to $1,700,000. This amount is within 15% of the 1927 deduction for taxes, depreciation, depletion, etc. To this would have to be added adequate depletion on the mining property, and taxes.

The balance of income available for interest, after taxes and depreciation has increased 68%. The interest requirements, in view of the reduction in funded debt, have decreased and, therefore, the equity position of the company's bonds is gradually improving, both from the standpoint of security of principal and margin of earnings over interest requirements.

The net income applicable to dividends has increased 248%, but this amount might be considerably reduced after a check of the depreciation policy. In the same way the net income carried to surplus would be correspondingly affected.

The operating ratio shows a fair reduction. The earnings available for interest charges on the funded debt and dividend requirements on the stock show substantial increases. The profit and loss statement seems to indicate that the company is at least holding its own so far as gross business goes, that its development program has succeeded in reducing the operating expenses and that the position of its securities is apparently becoming gradually stronger. The drop between 1926 and 1927 is probably traceable to the general decrease in the iron and steel business and labor conditions, but such a conclusion could only be drawn after further careful analysis.

Summary.—The preliminary examination has shown us that the balance sheet position of the company is not as favorable as it might be. The profit and loss analysis indicates an apparent improvement in the business of the company, which is reflected in the balance sheets by an increase in surplus but not by an im-

provement in the liquid position of the company. The apparent improvement in earnings would make the company an interesting financial problem from the standpoint of bankers and capitalists.

A large company like the Colorado Fuel & Iron Company has been chosen and its published statements condensed to emphasize the limitations of the Preliminary Analysis. Such an analysis would probably indicate that in most cases a more intensive study should be made. The Preliminary Analysis, however, leaves unanswered such questions as the following:

1. The company operates in the West in a largely agricultural area. With high freight rates it would seem that the company is operating under severe handicaps because of the nature of its territories. Obviously the company cannot compete successfully in the East. With the development of Birmingham, Alabama, as a steel center, it would seem that the company's territory would be further limited.

2. The Moffat Tunnel has just been opened in Colorado. This tunnel is a short-cut through the mountains. Whether the company's coal and iron deposits are so situated as to materially profit from this transportation improvement would have to be determined. We are under the impression that the desirable properties opened up by the Moffat Tunnel are in the hands of competitors.

3. The condition of the plants is not known. Assuming the company operated very close to capacity in 1927, it would be in a difficult position to make additions through financing. Such improvements could not be financed out of cash and earnings. It is also evident that the present capital structure is not properly balanced, since the funded debt is approximately 48% of the total capitalization, even though a slight reduction has been made in the past few years.

4. The sales of the company should be analyzed very carefully, because the increase in receivables without a corresponding increase in volume of business seems to indicate that they are making more liberal concessions to obtain business.

5. The organization and the management should be thoroughly checked.

6. The product and reputation of the company in a general trade way should be carefully investigated.

7. Such additional figures as were indicated in the balance sheet and profit and loss analysis should be provided, so that a complete comparative statement analysis of the company could be adequately made.

8. From a preliminary analysis of the foregoing balance sheets and profit and loss statements, it would appear that the Colorado Fuel & Iron Company has tendencies toward the following industrial ailments:

(a) Insufficient profit
(b) Insufficient working capital
(c) Top-heavy financial structure
(d) Over-investment in inventory
(e) Over-investment in receivables

Inasmuch as the foregoing ailments are primarily financial rather than economic, they are probably curable over a period of time through the medium of a comprehensive rehabilitation program which would necessarily include among many other items, the introduction of additional capital.

CHAPTER IX

THE TECHNIQUE OF COMPLETE ANALYSIS

In order to reach an accurate decision in the analysis of an industrial situation, a detailed and comprehensive survey must be made. The Complete Analysis, therefore, should cover all of the different phases of a study and leave but very few doubtful items to be considered. There usually remain some few questions that cannot be answered directly because of the immeasurable quantities that are involved. These, however, will be reduced to a minimum as a result of the Complete Analysis. It is difficult, for instance, to forecast accurately the volume of sales that can be expected during the next twelve months on a new product. Similar questions present themselves in connection with the economic conditions of the particular industry, with respect to sales expansion, labor conditions, market prices, and similar uncontrollable factors.

Scope of Complete Analysis.—The Complete Analysis involves both desk and field work. This analytical work can be done in any particular order that is desired, depending upon the facilities that the analyst has at his command. For purposes of illustration the Complete Analysis has been divided into the "desk work" and "field work."

The "desk work" includes:

1. The determination of the economic position of the industry.
2. Analysis of the business, especially the gross sales.
3. The comparative balance sheet analysis.
4. Comparative profit and loss statement analysis.
5. Comparison with other companies (the vertical check).

The "field work" includes:

1. A study of the company's operating methods.
2. Plants (an actual survey of fixed assets).

3. A study of sales and selling methods.
4. The management (organization study).
5. A study of the board of directors.
6. A field check of the product and competitive conditions.

It will be appreciated from a review of the above items that the Complete Analysis covers practically all phases of a given industrial situation. The "desk work" in the Complete Analysis is very much more detailed than that required for a preliminary study. The "desk work" is confined primarily to an analysis of figures and printed statistical data. Thus the determination of the economic position of the industry is made by an analysis of such figures as quantity of goods produced, number of people employed, and the amount of capital invested.

The analysis of gross sales and the analysis of the financial statements are made from the figures provided by the company. In order to make a comparison with other companies, it is necessary to get the financial statistics on the company's competitors.

In studying the field work it is necessary to cover completely the company's operating methods, in order to find out whether the business is operated according to the accepted standards.

The plants are studied by actual survey. The sales and selling methods must be studied both in the company's plants and in the field with the company's customers and competitors in a similar way. It is essential to cover the character and capacity of the individuals comprising the board of directors and the operating organization.

No specific set of questions can be created to cover the eleven items listed above. Each particular problem requires special analysis, so that it is best at this point to consider an actual case.

Complete Analysis Illustrated—Rockwall Company[1]

This particular company has had a rather unsatisfactory history. This analysis of the company's affairs involves certain very

[1] This illustration is an actual case, but in this one instance it has been found desirable to use a fictitious name for the company analyzed.

interesting industrial problems. The corporation might be analyzed from the standpoint of the investment banker relative to public financing, or with respect to the requirements of the speculator or large investor. In any case, the analysis would be substantially the same. However, this company presents a practical case and should be considered in that light. Let us assume therefore, that the study is made by an individual capitalist who owns $1,000,000 worth of the $9,000,000 outstanding in 7% cumulative preferred stock. It is conceivable that a large capitalist or a group of two or three investors might own 12% of the preferred stock of a company this size.

Desk Work

History of the Rockwall Company.—The Rockwall Company was incorporated September, 1919, under the laws of Delaware as a holding company. It owns the entire capital stock of the Rockwall Corporation, which operates and controls through stock ownership all the companies manufacturing and selling Rockwall and its allied products. The subsidiaries control sources of raw materials required in connection with the operations of the business.

The Rockwall Corporation was incorporated under the laws of New York, in May, 1922, as a manufacturing subsidiary. The company owns and controls seventeen manufacturing plants in the United States and Canada. The principal products of the company are Rockwall board, gypsum, wallboard, roofing materials, and newsprint paper. The company's plant at Thorold, Ontario, is a modern pulp, paper, and board mill of 50,000 tons annual capacity. A rossing mill is located at Frederickhouse, Ontario. The principal gypsum plants of the company are located at Fort Dodge, Iowa; Akron, New York; Gypsum, Ohio; Blue Rapids, Kansas; and Agatite, Texas. The principal saturation plants and felt mills are located at Chicago, Illinois; Albany, New York; Anderson, Indiana; and Kansas City, Missouri. The

company controls practically all of its own supply of raw materials through the ownership of gypsum mines in the principal producing districts of the United States, and through Canadian subsidiaries owns 180 square miles of virgin timber limits in Ontario. The company controls the Rockwall Company, Ltd., of Great Britain, which is a foreign sales organization.

This analysis will be confined to published information even though the details of the company's business are available. No conclusions will be indicated except those drawn from the analysis. An analysis of the affairs of the company will be made in order to determine whether or not it is advisable for the investor and bankers to maintain their present financial position, liquidate, or make additional commitments. An attempt will be made to determine whether the company's earnings are adequate or inadequate. If the earnings are inadequate, it must be determined if this industrial ailment is the result of improper sales policy, production inefficiency, or top-heavy capital structure.

The Economic Position of the Industry.—It is appropriate at this point to consider just what constitutes an industrial unit. In Figure 26, there is included a chart showing in a rather elementary way how an industrial unit may be visualized. The lowest stratum includes all economic activity. On this sea of economic activity, which is constantly in motion, there float various industries. Within a particular industry float several independent industrial businesses. Any particular business in turn supports an organization, which is, in reality, the management. The management in turn produces the sales. The sales in turn support the plants, and the entire structure should provide profit. The diagram shows how these different factors, as vessels, float one within the other. The structure looks unstable, which is exactly the impression intended to be conveyed. Disturbances in the fundamental field of economic activity may upset the vessel of "industry" together with everything it supports, and disturbances within the industry may upset one or more business

structures. Assuming all is calm to this point, it is apparent that the particular organization becomes the next vital factor. The plant, it will be seen, is the least significant of all the elements that comprise the structure supporting the profits. This chart is made in order to effectively portray the lack of stability in industrial enterprises.

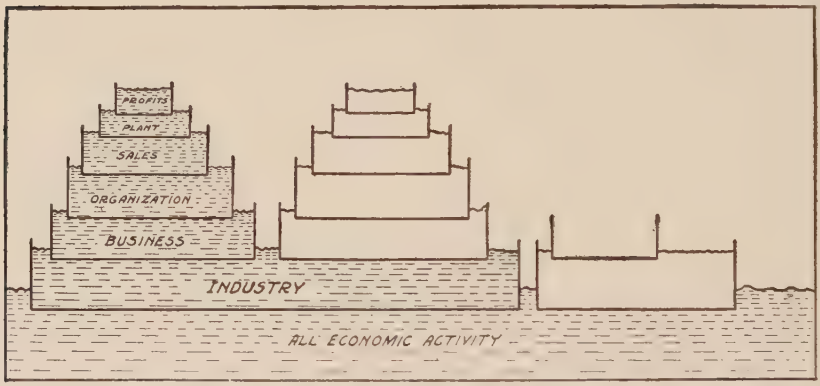

Figure 26. Chart Showing the Relation of the Component Parts of the Business Structure to Economic Activity

Economic Position of the Rockwall Company.—As has been indicated, the Rockwall Company manufactures a rather wide range of products affecting the following industries:

1. Newsprint
2. Wallboard
3. Gypsum products
4. Roofing

Immediately there arises a situation in which the company is catering to more than one particular industry. Newsprint is directly dependent upon newspaper publication, while wallboard and roofing are dependent upon new building construction and old building repairs. Gypsum and gypsum products might be used in many industries, but the Rockwall Company's sales of these products have been made chiefly to the building trades. It is,

therefore, necessary to consider primarily two industries—newsprint and the building trades.

A rather exhaustive study of paper and paper products made by the Standard Statistics Company indicates that the consumption of the newsprint in 1928 was slightly in excess of that in 1927. However, the "over-capacitation" of the industry as a whole militated against planned operations to the extent that there resulted an unsatisfactory profit for the majority of manufacturers. The paper industry as now equipped could turn out products materially in excess of present or early future needs. In the first four months of 1928, Canadian newsprint mills operated at 84.4% of total productive capacity, and mills in the United States at 81%, the combined rate being but 83.1% of total productive capacity. Mills of the two countries, considered jointly, operated in 1927 at an 85% rate compared with about 97% in 1926.

A more detailed study of newsprint production, stocks, and prices indicates that the position of the Rockwall Company is not particularly favorable from the standpoint of the economic position of the industry. The tendency has been toward the concentration of mills in a few strong hands. Obviously the company can only look for increased competitive conditions in this industry.

As far as the building industry is concerned, contracts seemed to indicate a satisfactory volume of business. Building material prices tended upward early in 1928, but on the whole were 3% below prices prevailing in 1927. Competition in the roofing material market became increasingly severe, and a price war resulted. Excess productive capacity in the industry and foreign competition are the principal unfavorable factors in the building supply business.

It will be seen that the Rockwall Company is confronted with keen competition in both its newsprint and its building materials departments. Both of these industries are large and substantial, but because of the over-production, some of the present companies must necessarily be eliminated, unless they can survive

until a time when consumption demand will more nearly equal productive capacity. Obviously the present industrial conditions are unfavorable, particularly to the financially weak manufacturer and ultimately must be detrimental to the marginal producer.

Analysis of the Business.—The Rockwall Company is engaged in the manufacture and sale of four distinct types of products. A consideration of the manufacturing and merchandising phases of these distinct commodities is of primary importance.

Newsprint is manufactured by taking timber, rossing it, pulverizing it into pulp, and finally running the pulp through a newsprint manufacturing machine. This equipment is very elaborate and of a continuous operation type, requiring the attention of specialists. The manufacture of newsprint paper requires machines not adaptable to any other manufacturing operation. The company is favorably situated from a geographical standpoint, so that its output is quite readily sold in the vicinity of its plants, thereby eliminating excessive transportation costs. Although actually the company does a small percentage of its gross business in newsprint, this newsprint division is quite profitable. The advent of the Rockwall Company into this field has been motivated by the attempt of the management to utilize to the fullest extent its excessive productive machine capacity. The success of this operation is a credit to the management. It is one of the favorable developments in Rockwall, and there is no doubt that the company could dispose of its newsprint business at a large profit.

Wallboard is a paper product manufactured like newsprint but in a coarser manner. This paper is then laminated and cut to size. The operation is quite simple but requires machinery other than that used in newsprint manufacture. Due to the fact that the laminating and cutting processes are quite simple, a great many small manufacturers have developed locally to compete actively with the Rockwall Company.

Gypsum is mined. It is then conveyed directly into the

fabricating plants located at the mine mouth. The fabrication is a combination of chemical and mechanical processes. The natural deposit is crushed, then pulverized, and finally heat-treated. This requires more special machinery and special operating forces.

Roofing is made by first preparing what is commercially known as felt, which is made from waste rags and heavy paper. The scrap material is shredded, soaked, and then compressed. The felt is then run through a hot tar bath, which process is known as saturation.

It can be seen that the four different classes of business are in no way closely allied from a manufacturing standpoint. The company must employ production specialists in each one of its different classes of business, with the result that the manufacturing operations at once become merely an association of activities rather than a well-integrated process.

Our study up to this point indicates that the company might follow one of two policies. The first would be to produce one type of product and dispose of its business in the other branches. The second would be that the company so expand as to be nationally situated in all four branches, with the result that it will be in effect four large independent companies each capable of maintaining a highly-paid executive personnel in production and sales. It could then afford an effective program of national advertising. A solution of these two problems will become apparent as the study is developed.

Comparative Balance Sheet Analysis.—Reference should be made to the comparative balance sheets for the five-year period ending December 31, 1927 (Figure 27). These balance sheets are set up on a horizontal trend basis. It will be noted that the year 1923 is used as a base. That year is not representative of a normal condition, but it will serve as a base for comparative purposes.

From the standpoint of current assets, it will be noted that the cash account has increased 27% in the last five years. The

The Rockwall Company

COMPARATIVE BALANCE SHEET—YEARS ENDING DECEMBER 31, 1923 TO 1927

	Dec. 31, 1923	Base %	Dec. 31, 1924	% of 1923	Dec. 31, 1925	% of 1923	Dec. 31, 1926	% of 1923	Dec. 31, 1927	% of 1923
CURRENT ASSETS										
Cash and Certif. of Deposits (Net)	1,116,989	100	1,445,991	129	1,629,800	145	993,419	89	1,427,832	127
Notes and Accounts Receivable	1,961,270	100	1,795,368	91	1,663,306	85	1,711,723	87	1,949,227	99
Banker's Acceptance	400,122	100	.....	...	.....	...	.....	...	.....	...
Inventory	2,103,324	100	2,495,134	118	2,571,311	122	2,670,408	127	2,067,902	98
TOTAL CURRENT ASSETS	5,581,705	100	5,736,493	103	5,864,417	105	5,375,550	96	5,444,961	97
FIXED ASSETS										
Investments In and Advances To Subsid. Cos.	.....	...	.....	...	.....	...	.....	...	355,297	...
Property and Equipment	.....	...	16,325,582	...	16,929,603	...	17,642,898	...	17,731,357	...
Less Reserves	.....	...	5,687,609	...	6,168,867	...	6,722,940	...	7,153,824	...
Property and Equipment (Net)	10,957,023	100	10,637,973	97	10,760,736	98	10,919,958	99	10,577,533	96
Patents, Trademarks, Etc.	1,511,348	100	1,511,348	100	1,511,348	100	1,568,848	103	1,568,848	103
Proceeds of Property and Ins.	644,936	100	557,338	86	.....	...	.....	...	.....	...
Other Assets	289,634	100	301,174	104	161,653	56	157,530	54	226,816	78
Deferred Charges	949,730	100	973,981	102	† 917,908	97	219,626	23	† 769,913	81
Bond Disc. and Reorg. Expense	.....	...	.....	...	.....	...	624,777	...	.....	...
Trustee Funds	.....	...	.....	...	516,202	...	.....	...	.....	...
Total Fixed Assets	14,352,671	100	13,981,824	97	13,867,847	96	13,490,739	94	13,498,407	95
TOTAL ASSETS	19,934,376	100	19,718,317	98	19,732,264	99	18,866,289	94	18,943,368	95

	Dec. 31, 1923	Base %	Dec. 31, 1924	% of 1923	Dec. 31, 1925	% of 1923	Dec. 31, 1926	% of 1923	Dec. 31, 1927	% of 1923
CURRENT LIABILITIES										
Notes and Accounts Payable	541,010	100	473,763	87	544,264	101	467,996	86	529,671	98
Accrued Liabilities	131,404	100	158,915	121	134,845	102	166,014	126	160,799	122
Reserve for Taxes	144,999	100	196,530	135	249,494	172	96,899	67	122,223	84
TOTAL CURRENT LIABILITIES	817,413	100	829,208	101	928,603	112	730,909	89	812,693	99
FIXED LIABILITIES										
Bonded and Long-Term Debts	7,652,000	100	7,247,700	95	7,163,500	93	6,495,300	84	6,249,100	82
Minority Interest	164,400	100	164,400	100	155,100	94	154,000	93	147,500	89
TOTAL FIXED LIABILITIES	7,816,400	100	7,412,100	95	7,318,600	93	6,649,300	85	6,396,600	81
CAPITAL STOCK AND SURPLUS										
Preferred Stock	9,112,150	100	9,112,150	100	9,113,750	100	9,114,350	100	9,115,550	100
Class "A" Common	610,000	100	610,000	100	546,000	90	552,000	91	552,000	91
Class "B" Common	*1,431,522	100	*1,635,124	114	*1,692,017	118	*1,715,478	120	*1,969,821	138
Other Reserves	146,891	100	119,735	82	133,294	90	104,252	71	96,704	66
TOTAL LIABILITIES, CAP. AND SURPLUS	19,934,376	100	19,718,317	98	19,732,264	99	18,866,289	94	18,943,368	95

*Represented by 150,028 no-par shares. †Includes Bond Discount and Reorganization Expense.

Figure 27. Comparative Balance Sheets Analyzed for Complete Analysis Purpose by the Horizontal Trend Method

account as of December 31, 1927, was about 23% of total current assets. This is certainly sufficient. The notes and accounts receivable have dropped in certain years but are now about the same as they were in 1923. The gross business figures of the company (although not available through the usual published sources) reveal a small increase in the dollar value of business and a sizable increase in tonnage. It is not possible to make an accounts receivable turnover calculation on the basis of consolidated figures because of the fact that different lines of products are sold under varying terms of sale. However, the company's collection problems are not important, as their losses from bad debts are very small. The inventories have been brought down only 2%. A physical inspection of this inventory reveals that on the whole it is composed of salable material. The company realizes that it should make deliberate efforts to reduce its inventories, but it is constantly compelled to add new styles and shapes, particularly in its roofing business in order to meet competition.

The physical property account is being maintained at substantially the same figure. This account includes mineral deposits, timber reserves, and factory sites, none of which are subject to depreciation. The timber and mineral reserves accounts are being depleted on the books as the raw material is used. Computing the machinery depreciation at 10% and the building depreciation at 3%, it would appear that the annual depreciation expense is adequate. It will be noted that for the year 1927, the depreciation was around $430,000. The patents and trademark account, which is increasing, is carried at over $1,500,000. The company is constantly adding new patents which offset the wasting element in this account. However, patents, goodwill, and trademarks have a real value only in so far as they are capable of producing adequate profit. Since the Rockwall Company is not showing even normal profits, the value of this account must be discounted considerably, if not entirely disregarded. The remaining items on the asset side of the balance sheet are being properly amortized.

Summarizing the asset side of the company's balance sheet,

it will be seen that its cash account has been kept well in hand and the total current liabilities have remained proportionate. The ratio of current assets to current liabilities in 1927 was 6.7 to 1. It will be seen also that the funded debt is being properly amortized. Since the net property account is over $10,000,000, the funded debt represents approximately a 63% mortgage. It must be remembered, however, that the properties mortgaged are highly specialized and not readily salable.

The capitalization remains practically unchanged during the five-year period. It should be noted at this point that the total capitalization is approximately $18,000,000. Should the $1,500,000 of patents and non-recoverable items in the deferred charges be eliminated, one immediately suspects that the company is over-capitalized. The balance sheet analysis has not revealed any tendency toward over-investment in receivables, inventory, or fixed assets. There is sufficient working capital but one is left with the impression that the company is over-capitalized, and this condition will be discussed later.

Profit and Loss Analysis.—The full operating figures have not been disclosed in Figure 28 because the company does not make these figures public. However, it is a fact that the gross business of the company is being maintained in dollars and is being substantially increased in tonnage. The detailed examination of the operating expenses reveals that excellent reductions are being made in the cost of converting goods from raw material to finished product. It can, therefore, be seen that the net profit is increasing. The general and administrative expenses have been more than cut in half in line with the company's economy program. The balance available for interest has almost doubled, which considerably strengthens the company's funded debt. The balance available for dividends indicates that the $7 dividend requirement on the preferred stock is not earned by a wide margin. Obviously, the company is a victim of the most important of all industrial ailments—insufficient profits. The com-

The Rockwall Company

COMPARATIVE PROFIT AND LOSS STATEMENTS—YEARS ENDING DECEMBER 31, 1923 TO 1927

	Dec. 31, 1923	Basic %	Dec. 31, 1924	% of 1923	Dec. 31, 1925	% of 1923	Dec. 31, 1926	% of 1923	Dec. 31, 1927	% of 1923
Net Profit (Includes Subsidiaries)	438,899	100	717,418	163	*778,143	178	777,924	177	Not	
Less General Expenses	47,061	100	35,043	74	23,961	51	21,035	44		
Net Profit (Bal. for Interest)	391,828	100	682,375	175	754,182	192	756,889	193	Available	
Interest Charges	370,504	100	370,512	100	362,872	98	355,232	96		
Net to Stocks	21,324	100	311,863	146	391,310	183	401,657	188	411,184	193
Earned Per Share Preferred	.23		3.42		4.29		4.41		4.50	

* Includes Other Income of $12,359.

Figure 28. Comparative Profit and Loss Statements as Analyzed for Complete Analysis Purposes by the Horizontal Trend Method

pany is operating at a little over one-half of full capacity. Under such conditions it is as a rule extremely difficult to show adequate earnings. Since the industries in which the company operates are all "over-capacitated," stepping up production would simply mean lowered selling prices and possibly a severe price war. The company is not in a financial position to engage in such tactics due to the size and strength of some of its competitors. Since it is almost impossible to double the company's production without disturbing the entire industrial situation, it would appear that the company, at least for the near future, must confine itself to its limited productive program. On this basis the company is over-capitalized.

Vertical Check (Comparison with Other Companies).—It is difficult to compare Rockwall with other competitive companies because there are so few that have the complicated business activity of this company. However, the American Products Company is about the nearest parallel to Rockwall, but this concern is so obviously superior that a comparison is unnecessary. The analyst should bear in mind at this point that Rockwall is making insufficient profit, that the industrial situation is not at all favorable, and that some move of major importance must be made in order to put the company on a profitable basis. Reduction of the capitalization, through a receivership, might be considered, but these corrective measures will be subsequently discussed.

Field Work

We have covered that portion of the study that was necessary in connection with the desk analysis of the Rockwall Company. The next step in Complete Analysis is that of the field study.

The Business.—We have previously mentioned that the Rockwall Company was engaged in the manufacture and sale of four distinct types of products. These products are separate and distinct both from a manufacturing and selling standpoint. The

company's production manager in charge of the felt mill at Anderson, Indiana, cannot be used to supervise the operations of the gypsum plant at Akron, New York. The salesman who sells gypsum products cannot handle the other products of the company for the simple reason that the sale of gypsum is a technical matter requiring the services of a specialist. Consequently, the company is employing traveling specialists in three lines of material over a common area and frequently to the same clients.

It must be apparent that the organization of the business is unsound. This does not refer to the organization of the personnel, but it applies to the peculiar intercompany relationship that has been established. Large consolidations are generally made to effect economies in the purchase of raw materials, in the conversion of these raw materials into finished products, and finally in their distribution. Since Rockwall is not in a position to take substantial advantage of any of these economies, it would appear to be distinctly an association of activities rather than a well-integrated consolidation based on fundamental operating economies.

However, the structure is not inflexible because Rockwall might be developed so that each of its separate activities could be expanded into a national organization which individually might enjoy these economies. Such an action done simultaneously with a revision of the capital structure might solve the problem.

It is interesting at this point to note, in Figure 29, the business organization of a successful manufacturing and selling unit like General Motors. A chart of this company is included and it indicates that the company has several motor manufacturing units, together with body manufacturing units, and finally an accessories group. All of these naturally combine to form a completely integrated automobile manufacturing business. Substantial economies are possible from the standpoint of raw material purchases. The purchase of steel for the Brown Lipe

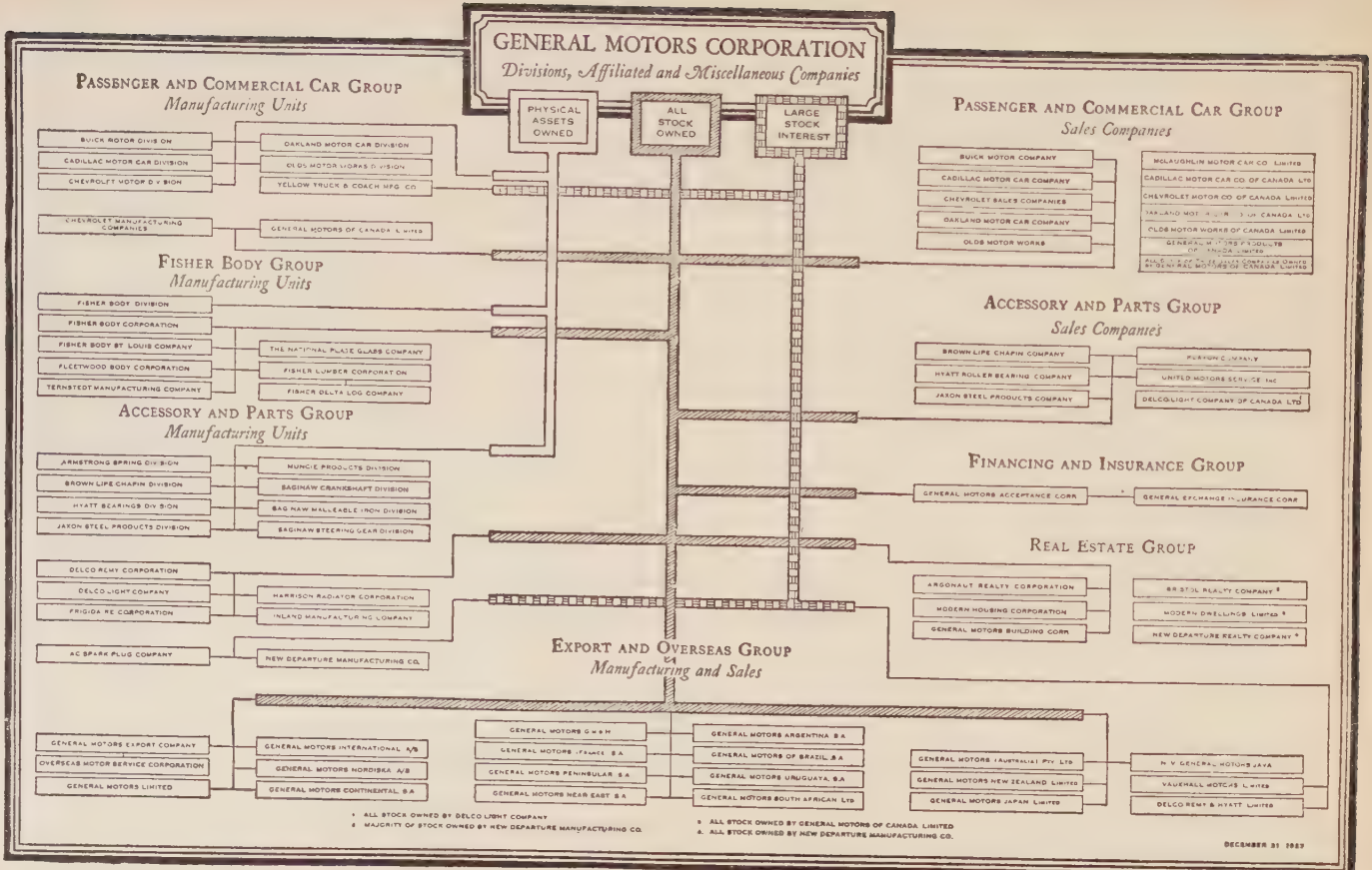
GENERAL MOTORS CORPORATION
Divisions, Affiliated and Miscellaneous Companies
PHYSICAL ASSETS OWNED
ALL STOCK OWNED
LARGE STOCK INTEREST
PASSENGER AND COMMERCIAL CAR GROUP
Manufacturing Units
BUICK MOTOR DIVISION
CADILLAC MOTOR CAR DIVISION
CHEVROLET MOTOR DIVISION
OAKLAND MOTOR CAR DIVISION
OLDS MOTOR WORKS DIVISION
YELLOW TRUCK & COACH MFG. CO.
CHEVROLET MANUFACTURING COMPANIES
GENERAL MOTORS OF CANADA LIMITED
FISHER BODY GROUP
Manufacturing Units
FISHER BODY DIVISION
FISHER BODY CORPORATION
FISHER BODY ST. LOUIS COMPANY
FLEETWOOD BODY CORPORATION
TERNSTEDT MANUFACTURING COMPANY
THE NATIONAL PLATE GLASS COMPANY
FISHER LUMBER CORPORATION
FISHER DELTA LOG COMPANY
ACCESSORY AND PARTS GROUP
Manufacturing Units
ARMSTRONG SPRING DIVISION
BROWN-LIPE-CHAPIN DIVISION
HYATT BEARINGS DIVISION
JAXON STEEL PRODUCTS DIVISION
MUNCIE PRODUCTS DIVISION
SAGINAW CRANKSHAFT DIVISION
SAGINAW MALLEABLE IRON DIVISION
SAGINAW STEERING GEAR DIVISION
DELCO-REMY CORPORATION
DELCO LIGHT COMPANY
FRIGIDAIRE CORPORATION
HARRISON RADIATOR CORPORATION
INLAND MANUFACTURING COMPANY
AC SPARK PLUG COMPANY
NEW DEPARTURE MANUFACTURING CO.
EXPORT AND OVERSEAS GROUP
Manufacturing and Sales
GENERAL MOTORS EXPORT COMPANY
OVERSEAS MOTOR SERVICE CORPORATION
GENERAL MOTORS LIMITED
GENERAL MOTORS INTERNATIONAL A/S
GENERAL MOTORS NORDISKA A/B
GENERAL MOTORS CONTINENTAL S.A.
GENERAL MOTORS G.m.b.H.
GENERAL MOTORS FRANCE S.A.
GENERAL MOTORS PENINSULAR S.A.
GENERAL MOTORS NEAR EAST S.A.
GENERAL MOTORS ARGENTINA S.A.
GENERAL MOTORS OF BRAZIL S.A.
GENERAL MOTORS URUGUAYA S.A.
GENERAL MOTORS SOUTH AFRICAN Ltd.
GENERAL MOTORS (AUSTRALIA) PTY. LTD.
GENERAL MOTORS NEW ZEALAND LIMITED
GENERAL MOTORS JAPAN LIMITED
N.V. GENERAL MOTORS JAVA
VAUXHALL MOTORS LIMITED
DELCO-REMY & HYATT LIMITED
PASSENGER AND COMMERCIAL CAR GROUP
Sales Companies
BUICK MOTOR COMPANY
CADILLAC MOTOR CAR COMPANY
CHEVROLET SALES COMPANIES
OAKLAND MOTOR CAR COMPANY
OLDS MOTOR WORKS
McLAUGHLIN MOTOR CAR CO. LIMITED
CADILLAC MOTOR CAR CO. OF CANADA LTD.
CHEVROLET MOTOR CO. OF CANADA LIMITED
OAKLAND MOTOR CAR CO. OF CANADA LTD.
OLDS MOTOR WORKS OF CANADA LIMITED
GENERAL MOTORS PRODUCTS OF CANADA LIMITED
ALL STOCK OF THE ABOVE COMPANIES OWNED BY GENERAL MOTORS OF CANADA LIMITED
ACCESSORY AND PARTS GROUP
Sales Companies
BROWN-LIPE-CHAPIN COMPANY
HYATT ROLLER BEARING COMPANY
JAXON STEEL PRODUCTS COMPANY
PERKINS COMPANY
UNITED MOTORS SERVICE INC.
DELCO-LIGHT COMPANY OF CANADA LTD.
FINANCING AND INSURANCE GROUP
GENERAL MOTORS ACCEPTANCE CORP.
GENERAL EXCHANGE INSURANCE CORP.
REAL ESTATE GROUP
ARGONAUT REALTY CORPORATION
MODERN HOUSING CORPORATION
GENERAL MOTORS BUILDING CORP.
BRISTOL REALTY COMPANY [5]
MODERN DWELLINGS LIMITED [5]
NEW DEPARTURE REALTY COMPANY [5]
1 ALL STOCK OWNED BY DELCO LIGHT COMPANY
5 MAJORITY OF STOCK OWNED BY NEW DEPARTURE MANUFACTURING CO.
3 ALL STOCK OWNED BY GENERAL MOTORS OF CANADA LIMITED
4 ALL STOCK OWNED BY NEW DEPARTURE MANUFACTURING CO.
DECEMBER 31 1929

Figure 29. Chart Showing Business Organization of General Motors Corporation

division can be made by the same individual and from the same source as the purchase of similar materials for the Chevrolet Motors, Fisher Body, Harrison Radiator, and others. Similarly, economies developed in the manufacture of the Oakland Motor Car can also be applied to any of the other motor manufacturing divisions.

The balance of the General Motors organization is made up of sales companies with the incidental finance, insurance, and real estate divisions. The company is so situated as to effect tremendous selling economies and to reach practically every class of market in existence. On the other hand, Rockwall makes three different building material products, but it caters to a single concentrated market. Thus, if building activity declines, three of Rockwall's four activities suffer. The diversification in the case of Rockwall is apparent rather than real.

Plants.—An actual survey must now be made of the physical assets of the company. It is noted first that the company's timber and mineral deposits are adequate and are also conservatively priced. Since the advent of the present management, a rehabilitation program has been instituted. Under this program considerable money has been spent in placing the plants on an efficient operating basis. Such efforts made by the company in the last five years are creditable. In a few cases this reconstruction has not been completed, but these few instances are not as a whole significant.

Unfortunately in bringing its plants up to an efficient operating level, the company has automatically increased its productive capacity. It has, however, failed to keep its sales abreast of the increased plant capacity and the business structure is, therefore, out of balance.

The company has discontinued a few of its minor operations and as a result has a small amount of idle, in fact, useless plant capacity. It is attempting to dispose of this idle plant where possible. However, factory sites are not at a premium in the

present market; therefore, it is doubtful whether the properties will bring a satisfactory price.

The distribution of plants is very important. All the materials of the company are bulk materials. Freight charges represent a very appreciable item. From a competitive standpoint the company is immediately limited to the profitable sale of goods within a certain transportation range of the plant. Outside of this area competitors are at a distinct advantage. One need not refer to a map to determine that the company's distribution of plants is not as favorable as it might be.

The physical inspection of the plants has revealed that the properties are in good operating condition, are fairly priced as to book value, are about twice the capacity that the company requires, and finally, are not ideally located from the standpoint of geographical distribution.

Sales.—The sale of the newsprint output does not present a problem to Rockwall. Because of the geographical position of its newsprint mill, the company can make ready distribution of this output on a contract basis. Selling expense, therefore, is negligible.

The rest of the Rockwall selling problem is unfortunately not such a simple matter. The three remaining classes of products to be sold are roofing, gypsum products, and wallboard. Let us consider each one of these items separately.

Roofing is manufactured by a comparatively simple process. As a result, there are many competitors in this field. The industry is not very well-organized, so that price competition at times becomes particularly keen. The company is limited in selling this material to areas of about 100 miles from its plant sites. It suffers this limitation because of freight rates. Material of this kind is subject to style changes, so that machines and inventory must be constantly changed to satisfy the selling requirements. Due to its unfavorable geographical limitations and the distribution of its plants, the company cannot do extensive national

advertising at a profit. It must employ special roofing salesmen because the products are sold to dealers in building materials who must be kept informed as to methods of application, methods for making repairs, etc. In addition, there is substantial competition from the manufacturers of fireproof roofing like the Johns-Manville Company. Then too, the company is confronted with the new products of competitors in the form of rigid roofing made from the cement mixtures. In a field where competition is keen and often unfair, the company is confronted with a selling problem whose solution calls for merchandising ability of an extraordinary character.

Consider now the position of the wallboard business. Wallboard is made in two general classes, namely, laminated paper wallboard and gypsum-filled wallboard. Both of these boards are used for wall and ceiling construction. They are cheap to install and have, therefore, real value. When Rockwall "paper board" was first introduced, it was a new product with practically no competition. The sales mounted. Gradually, competitors crept in, making substantially the same product. The name became over-advertised like "Kodak." People asked for Rockwall when they did not necessarily mean a Rockwall Company product. Conversely, a large number of people who believe they have purchased Rockwall have really received the product of a competitor. As is natural in an industry, improvements were made in this type of product. Notable among these is Celotex, which is made from begasse (the waste sugar cane stalks). Naturally the wallboard end of Rockwall's business is no longer the principal item of sales. In order to continue successfully in this branch of this business, the company has developed an improved board which contains alternate layers of felt and paper. This product has the advantage of being soundproof and more resistant to fire than the old product. The company has, therefore, succeeded in keeping abreast of the industry, but once again is confronted with the problem of being able to make more goods than it can sell. However, the company considers it inadvisable to attempt to

expand sales through price-cutting because of the fear of a resulting price war. Here again, the company needs something in the nature of a merchandising miracle to solve its problem.

The next product to be considered is gypsum. Gypsum is used in building materials for walls, ceilings, and house insulation. The condition in the gypsum industry is about as competitive as it is in the other branches of the company's business. Here again, because the product is comparatively cheap and very heavy, the matter of freight rates limits the distribution. Furthermore, the company is confronted with the problem of competing with the gypsum specialists like the U. S. Gypsum Company. The company cannot start a price reduction program because its competitor is so favorably situated.

The company is obviously confronted with a merchandising problem, the solution of which is not clear. The field check indicates that the company bears an excellent reputation, that its products are equally well thought of, and that its sales organization is capable.

Management.—The organization of the personnel of the Rockwall Company is substantially favorable. The president has under his immediate control an executive in charge of each one of the three major divisions of the business, namely, sales, production, and accounting. While the sales figures might be criticized, it is necessary to appreciate the picture in its entirety. The sales manager has been confronted with extremely competitive conditions and has had special problems not entirely apparent at first. The figures on production indicate that the company, through its production manager, has succeeded in satisfactorily reducing its costs. The accounts of the company are in such shape as to satisfy every reasonable demand of intelligent management.

Further check of the personnel in the administrative and operating ends of the business indicate that there is little criticism to be made of the individuals or the arrangement of the organiza-

tion. The management is awake to the difficulties the company is in. What minor changes could be effected in the organization would be entirely incidental to the real solution of the company's problem. The field study indicates that the organization is of high calibre.

Board of Directors.—The board of directors of the Rockwall Company is composed of a group of prominent business men and bankers who are in a position, through their various connections, to be of considerable assistance to the management. These men are awake to the particular condition of the company. It must be said that the board of directors have been patient with this company, especially in view of several unfortunate circumstances in which the organization has become involved. For instance, some years ago the company arranged some public financing only to have its bankers fail. The present bankers for the company have been rather considerate in helping the company reestablish itself. No recommendations could be made that would improve the quality of the board of directors.

Field Check of Products.—It is necessary to make a field check of the product to determine the dealer and consumer attitude toward the company. In order to do this, it is necessary to pick a large number of the company's customers in different areas. It is also necessary to include customers of competitors. Naturally the large number of interviews and the wider the area that is covered the more representative will be the result. It is surprising how very distinct an impression is gained through such a procedure. We find as a result of the field check that the company's products are favorably known as to price and quality. The dealers are also satisfied with the service the company renders. The shipments are always for the full amount and the bills are correct. Only one unfavorable condition is detected and that is that the company's competitors in some cases emphasize the financial condition of the Rockwall organization, declaring that

the structure is unstable. As a dealer is always anxious to associate with a successful manufacturer, this has cost Rockwall a few accounts but not enough to introduce any serious field difficulty.

Such a field study is entirely necessary and involves a considerable amount of time and money. A definite set of questions must be formulated before the field study starts. Then, after the field work is completed, the results of these questions must be tabulated in order that conclusions may be drawn. From the field study there appears to be nothing that can seriously be criticized in the merchandising of the products of this company.

Summary of Complete Analysis.—The results or findings of this study may now be summarized. As many conditions existing in the company are unsatisfactory, it is desirable that we emphasize these rather than the favorable features which do not call for any specific treatment. The reader's memory, however, might be refreshed with the fact that the company's plants are in a generally satisfactory condition, its management and its board of directors are both capable, its products are well and favorably known, and that relations with its customers are satisfactory. Let us now emphasize the unfavorable features.

The study has indicated that over-production is present in the roofing, gypsum, and wallboard industries. Regulation of an industry is usually beyond the scope of an individual company. The Rockwall management has been particularly active in attempting to organize these separate industries through the formation of trade associations. This alone is a laborious task. Results cannot be expected except over a matter of years. The action is commendable, but obviously cannot be made immediately profitable. If the company were in a strong financial position, it might stand by long enough to allow consumption to catch up with the present industrial capacity, but it is apparent that the company is in no position to do this. It would seem, therefore, that the company would have to evolve a program under which

it might absorb a number of its competitors, or else itself be absorbed in such a consolidation.

Our study has indicated that the business is not well-organized. If the company could have national distribution through proper plant locations, it might organize in such a manner as to have three large producing and sales units in gypsum, wallboard, and roofing. Such a business unit would be advantageously placed from a standpoint of national sales with its overhead distributed over a large volume of business. An institution of this kind would be able to support an organized research division so that the company could become a leader in the creation of products rather than a follower of its competitors. From a banking standpoint, it would mean that Rockwall would have to absorb a large number of competitors. These competitors would have to be, on the whole, successful so that sufficient earnings would result to enable the bankers to do public financing. The cost of such purchases would obviously be high. This factor, coupled with the present financial structure of Rockwall, would make public financing quite difficult, if not impossible. It might be said that this is hardly a solution to the company's problem.

The company might attempt to determine which of its three lines of business holds the greatest potentialities. Assuming that the gypsum business is more profitable and presents the greatest future prospects, the company might sell its roofing and wallboard plants, and with the proceeds acquire properly located gypsum mills. This would necessitate a long program, but such a course might work to the company's ultimate profit.

The company has demonstrated its inability to earn satisfactorily on its present financial structure. The easiest way to remedy this condition of over-capitalization is to put the company into a receivership or propose a plan of recapitalization. In this reorganization the funded debt would largely be converted into equity securities and so reduce the company's fixed charges. We have emphasized that the bankers have been patient with this company in their attempt to constructively rehabilitate the earning

power. Receivership would be a rather ruthless measure and would indicate a last resort procedure. Neither the company nor the bankers would agree to this. Furthermore, such a solution would not necessarily be permanent because increased competitive conditions might again find the company with reduced earning power.

As the company is unable to show adequate profits, its chances of increasing the profit are not very promising due to the prevailing conditions in the industry. Our study has shown that the plant capacity is in excess of selling capacity. The problem of disposing of this excess capacity is not easily solved. For instance, the company cannot very readily sell one-half of a roofing plant. On the other hand, the problem of increasing sales to a point in keeping with capacity seems out of the question in such a competitive market. Certainly the company's outlook as regards profits is not promising.

The company's plants are not ideally distributed from a geographical standpoint. It seems unlikely that the company can absorb competitors in other locations so as to improve this distribution. It, however, brings up a new point which suggests the absorption of the Rockwall plants by a company that requires plant capacity in these particular areas. In other words, can the company effect a sell-out of its assets to a competitor sufficiently prosperous to pay a fair price for such an acquisition? This last named alternative seems to have no substantial defects. There are organizations large enough to effect such a purchase.

It is interesting to note that the bankers who have been attempting to work out the Rockwall problems disposed of this company to the American Products Corporation. Let us consider the position of the interested parties, namely, the Rockwall security holders and the American Products Corporation. The bonds of the Rockwall Company were called. The stockholders were offered cash for preferred stock and for the common. The preferred stockholders were in addition allowed the choice of taking American Products stock in payment. It might be said

that $50 for the preferred and $5 for the common was not a high price, but it was certainly higher than the Rockwall earnings justified and considerably in excess of what would have been realized in liquidation.

On the other hand, the American Products acquired an organized business with all the advantages that accrued from the Rockwall name. There follows a description of the American Products which shows that the Rockwall improved, among other things, the plant distribution of the American Products Corporation.

"American Products Corporation was organized January 30, 1917, as a continuation of the General Roofing Manufacturing Company, an Illinois corporation organized in 1904. The original company closed its first year with total assets of $33,305 as compared with approximately $44,300,000 of the present company, after giving effect to the acquisition hereinafter referred to at the end of 1927. At the time of the formation of the present company, paint and varnish plants at St. Louis and an additional roofing plant at Niagara Falls were acquired, and the California roofing and paint plants were constructed. In 1920 the Thos. Potter Sons & Co., Inc., manufacturers of linoleum, felt base, and table oil cloth, were purchased, and in 1923 the company acquired the plants and certain properties of Cook's Linoleum Company, and Standard Inlaid Manufacturing Co., of Trenton, N. J., also manufacturers of linoleum felt base floor covering, cork carpet, etc., and the Acme Cement Plaster Company, manufacturers of gypsum products. As of March 31, 1928, the corporation acquired by purchase all of the assets and properties of the [Rockwall] Company, manufacturers of a complete line of gypsum products, wood fibre wallboard, asphalt roofings, newsprint, asbestos products, and other allied lines. The corporation and its subsidiaries now has thirty-six plants, and has acquired large land holdings comprising timber-bearing property in Canada, and gypsum beds in various parts of the United States of America.

"A complete list of the properties of the corporation and subsidiaries, after giving effect to the acquisition of the Rockwall properties, is as follows:

Roofing plants and felt mills:
York, Pa.
Niagara Falls, N. Y.
Albany, N. Y.
Anderson, Ind.
Chicago, Ill.
Marseilles, Ill.
E. St. Louis, Ill.
Kansas City, Mo.
Richmond, Cal.
Deschenes, Quebec.

Gypsum plaster plants:
Akron, N. Y.
Gypsum, O.
N. Holston, Va.
Grand Rapid, Mich. (2)
Ft. Dodge, Ia.
Blue Rapids, Kans.
Acme, Okla.
Cement, Okla.
Acme, N. M.
Acme, Texas
Agatite, Texas
Laramie, Wyo.

Plaster wallboard plants:
Akron, N. Y.
Fort Dodge, Ia.
Grand Rapids, Mich.
Acme, Texas

Gypsum deposits:
Akron, N. Y.
Clarence, N. Y.
Grand Rapids, Mich.
Gypsum, O.
N. Holston, Va.
Ft. Dodge, Ia.
Blue Rapids, Kans.
Kay County, Okla.
Willow, Okla.
Acme, Okla.
Cement, Okla.
Turkey Creek, Colo.
Morrison, Colo.
Acme, Texas
Fisher County, Texas
Childress County, Texas
Agatite, Texas
Acme, N. M.
Laramie, Wyo.
Inyo Co., Cal.
Gypsum, Oregon

Floor covering plants:
Philadelphia, Pa.
Trenton, N. J.

Paint, varnish, and enamel plants:
St. Louis, Mo. (2)
Tonawanda, N. Y.
Richmond, Cal.

Asbestos products plant:
Tonawanda (shingles and panels)

Fibre wallboard plants:
Tonawanda, N. Y.
Thorold, Ont.

Pulp and paper mill:
Thorold, Ont.

Timber operations:
Frederickhouse, Ont.
Buskegsu, Ont."

The American Products Company has been a successful company and was enabled to finance the purchase through the public sales of bonds. There is no substantial reason why the earnings of this company should not improve with the increased facilities.

CHAPTER X

THE LIMITED ANALYSIS

The Scope of Limited Analysis.—The Limited Analysis differs from the Complete Analysis in that the field work is omitted. This analysis is not recommended except in certain instances. It frequently must be made in connection with the requirements of certain financial operations. The large security buyer, for instance, must usually be satisfied with a Limited Analysis. Frequently an investigator or institution is confronted with the problem of reaching a decision in a limited time in order to consummate a piece of business, and must, therefore, be contented with a Limited Analysis. The limitations of the Preliminary Analysis have already been indicated. The real value of a Complete Analysis has also been brought out in Chapter IX. It now remains to modify the Complete Analysis so that conclusions can be made a matter of hours and without taking the time and expense associated with the Complete Analysis.

It is important to repeat the fact that financial commitments in all industrial enterprises involve a certain degree of risk. The risk for the bondholder is minimized, but there is nevertheless a chance of loss for even the first mortgage security holder. The Complete Analysis is designed to eliminate as much of this risk as is possible through the consolidated efforts of the engineer, the accountant, and the banker. Decisions reached as a result of a Limited Analysis are obviously not as free from risk. Generally the amount of risk eliminated is directly proportionate to the thoroughness of the analysis. Therefore, since even a Complete Analysis cannot possibly remove all the elements of risks inherent in the financing of an industrial enterprise, it is obvious that the risk associated with the commitment as a result of a Limited

Analysis might be quite large. The Limited Analysis is offered simply as a practical expedient.

In order to describe completely the Limited Analysis it will be necessary to recall some of the statements made under the Complete Analysis described in the previous chapter. The Limited Analysis includes practically the same desk check as the Complete Analysis. Certain modifications are made which are outlined in the subsequent paragraphs.

The Industry.—The analysis of this factor remains unchanged. It is necessary to determine the statistical position of the industry, and the sources of information and the methods used for interpreting the information are the same as in the Complete Analysis.

The Business.—It is important in the Limited Analysis to determine exactly the nature of the business. In order to do this the gross revenue figures of the particular enterprise must be provided. If these figures are not available, it might as a general rule be desirable not to carry the analysis much further. Of course, if a company is a one-product type of business, such as a coal mine, the gross business factor is reduced in importance. However, should the business be distributed, as was indicated in the case of the Rockwall Company, the analysis might fail to reveal one of the most objectionable and unprofitable features of the business.

Balance Sheet Analysis.—The regular detailed comparative balance sheet analysis must be made. It is important to look for:

1. Over-investment in receivables
2. Over-investment in inventories
3. Insufficient working capital
4. Over-investment in fixed assets

The methods of checking to detect these weaknesses, is the same as in the Complete Analysis.

Profit and Loss Statement Analysis.—This comparative analysis is also made in the same manner as previously described. However, in the absence of engineers' reports, or a personal inspection of the equipment, it is frequently necessary to make what might be called an "educated guess" as to the amount of depreciation and depletion required. As this involves a rather important adjustment in the most significant statement of the enterprise, it is well to consider in some detail the matter of depreciation, depletion, and obsolescence.

The balance sheet should at least give the total plant account. The actual calculation, if it is to be made accurately, calls for a breaking down of this account into its component parts, as has previously been outlined.

As this is generally quite difficult and in fact frequently impossible with the available data and time, the general figure can be used with reasonable accuracy.

Depreciation.—Depreciation is exactly what the name implies —a loss in the value of an asset due to usage. This naturally varies with the type of equipment and the service to which it is to be put. In making the usual depreciation calculations, the average life of a machine is used, and it is assumed that the machine is run under average service and is given adequate attention so far as lubrication is concerned. It is easy to understand that a machine such as a lathe, with proper care, would last longer than a machine such as an acid pickling tank, in which the material used is highly corrosive and in which the tank is periodically wet and dry, making the destruction even more rapid. It would follow then, generally speaking, that depreciation would be higher on ice cream and laundry machinery than it would be on common machine shop equipment.

Maintenance.—Maintenance represents the expenditures incurred in keeping equipment in repair. This is not a deduction from the asset account nor is it a capitalized item. It is assumed that the money expended in maintenance keeps property in an

efficient operating condition and so in part offsets depreciation. This is reasonably true when applied to equipment like railroad tracks, pipe lines, and overhead wires. In such equipment when a small portion begins to show wear, it is replaced, and so improves the value of the equipment. However, maintenance cannot completely take care of the wear and tear on machinery such as generators, motors, pumps, and boilers. By adequate maintenance, the life of these machines can be lengthened, but a time will come when they will have to be replaced entirely.

Depletion.—Depletion constitutes a deduction made from earnings to take care of a wasting asset that cannot be rebuilt. Depletion enters into the extractive industries like coal mining, iron mining, oil production, and the like. In the case of a coal mine that has estimated coal deposits of 10,000,000 tons valued at $1,000,000, the depletion calculation is obviously 10 cents per ton. In other words, the coal is worth 10 cents per ton in the ground and every ton that is removed reduces the fixed asset account by 10 cents. Therefore, it is imperative that this depletion deduction be made from earnings for every ton of coal mined if the company is to maintain its capital investment. The same reasoning holds true in all other extractive industries.

Obsolescence.—Obsolescence enters into the calculation when it is economical to replace an existing machine with new equipment that has a higher productive capacity and a lower cost of production. It is difficult to estimate obsolescence without having the detailed facts on a specific situation. Furthermore, only a part of machine equipment becomes obsolete at a given time. If adequate depreciation calculations are made, obsolescence will at least be partially covered by these figures.

In Figure 30 is given a table of values of depreciation and maintenance that can be applied against the entire fixed asset account to get a "round figure" that will serve as a reasonably accurate estimate of the adequacy of depreciation policy. The values on the depreciation are calculated against the whole fixed

asset account appearing in the balance sheet. Thus, an electric railway with a $10,000,000 asset account might have depreciation of from $50,000 up to $290,000, with an average charge for depreciation of around $175,000.

The values on maintenance are computed on gross revenues. Thus, if the gross business is known the high, low, and average

	Whole Fixed Asset Account Depreciation % Rate			Gross Revenue Account Maintenance % Rate		
	High	Low	Avg.	High	Low	Avg.
RAILROADS						
Steam	1.25	.80	.95	35.00	31.00	33.75
Electric	2.90	.50	1.75	14.16	10.70	12.40
Street	1.84	1.00	1.50	16.22	13.70	14.85
UTILITIES						
Gas	6.00	1.00	2.50	7.80	5.30	6.40
Electric	2.70	1.00	1.80	12.80	6.40	8.65
Water	2.60	.70	1.50	8.40	3.30	6.05
Telephone	7.15	3.40	4.50	25.00	15.00	18.50
Natural Gas	3.75	.90	2.25	7.75	5.25	6.50
Combined	3.40	.75	1.85	9.35	5.25	7.10
INDUSTRIALS						
Extractive	10.00	.65	6 50	—	—	—
Manufacturing	11.00	5.00	7.40	—	—	—
Merchandising	10.00	.60	4.60	—	—	—

Figure 30. Comparative Depreciation and Maintenance Rates for Limited Analysis Calculations

maintenance can readily be computed from the rates listed in the table in Figure 30.

Vertical Check (Comparison with Other Companies).—The vertical check is substantially the same in this case as has been outlined in the technique of Complete Analysis.

The balance of the Limited Analysis represents little more than substitutes for the field work made in the Complete Analysis. These items are in turn discussed in some detail.

The Business.—It is important to determine the exact nature of the company's business, the reasons for the company's growth, and its prospects for the future. If the company has been carried along on the crest of a tremendous expansion in general business, it may not necessarily mean that this particular business is permanent. It is only necessary to think of the large number of enterprises which enjoyed phenomenal growth during the war, only to disappear when economic conditions again became normal. Then there are other cases, such as the radio field, in which numerous small companies have come into existence largely as a result of the research done in years past by the large electrical companies. When conditions in this field became highly competitive, many of the new and weaker companies disappeared.

Probably the best way to check a business from the standpoint of the economics of the industry is to resort to the trade association representing that industry. The statisticians of these associations are usually well-informed. Another source might be the commercial or investment banker specializing in the securities of that particular industrial field. A third possible check is to analyze the condition of the securities in similar companies from their market quotations, annual reports, and other statistical data.

Plants.—In the absence of an engineer's report or a personal inspection, it is necessary to get some idea of the productive value of the plant in dollars as a check against the indicated book values and, in addition, to obtain some idea as to the company's ability to produce goods efficiently at competitive prices.

The average depreciation should be computed for the number of years the company has been operating. This latter figure can be developed from the company's past record. By deducting the

depreciation from the calculated plant value a fair estimate can be had of the value of the physical equipment.

In order to estimate the general accuracy of the expenses of the plant, it is necessary to compare the operating ratio, that is, the total operating expenses divided by the gross revenues, with the same figure for competitors. This figure should be practically the same in competitive companies of approximately the same size and operating under similar local conditions. Generally speaking, a large plant would be more efficient and would, therefore, have a lower operating ratio.

Sales.—Sales constitute the backbone of any enterprise. Any appreciable reduction in gross sales should be explained. If it can be explained through a general depression in the industry, it does not necessarily represent a serious condition. However, this item should be checked against the performance of competitive companies wherever possible.

A list of the company's chief customers should be obtained. If large successful companies are customers of the particular enterprise under consideration, it speaks well for the product and the company. It is always good, however, to amplify this work by a telephone check with the users of the company's products and those of its competitors' products.

Management.—The time used for a limited analysis permits of no interviews with the executives in control of the company and with members of the board of directors. It would be desirable to get an organization chart on which are indicated the important executives. Along with this chart should be given a rather detailed history of the business lives of these executives. A similarly detailed statement should be provided covering the board of directors. Such investigation services as Bishop's Agency and Proudfoot's Agency in New York City, are especially valuable for information as to the character factor in checking the integrity of business executives. From this information the analyst will have to decide whether or not the management is

sound. It is like employing a high-salaried executive by mail, sight unseen. The limitations of such methods are obvious.

Where large expenditures of money are involved, there is little excuse for one being rushed into a situation by way of the Limited Analysis. On the other hand, it is true that a skilled securities buyer might be so familiar with the general conditions existing in a given industry that he might make quite accurately a Limited Analysis. In such a case the experience of the individual conducting the investigation makes up in a large measure for the apparent limitations of this type of analysis.

Limited Analysis Illustrated—Belding-Heminway Company

Illustrative of the Limited Analysis there is included the following practical case. As Limited Analysis consists largely of a statement analysis, our discussions will be confined to a trend analysis and limited ratio study of the comparative balance sheets and comparative profit and loss statements. These statements have been set up on the basis of a five-year comparison. The earliest year in each case has been used as a base. The percentages in all these statements have been computed by means of the slide rule and are sufficiently accurate for purposes of a Limited Analysis.

The Industry.—The silk industry is one of the oldest divisions of the textile trade. In fact, silk was in general use long before cotton and wool were introduced to the public. Despite the trying times through which the industry has passed in the last few years, it has nevertheless continued to grow rapidly, as is shown in the following table:

MANUFACTURERS' TAKINGS OF SILK

(In pounds)

1927	73,336,200	1923	47,669,860
1926	66,706,150	1922	48,748,490
1925	66,744,720	1921	42,646,450
1924	48,670,020	1920	26,086,620

However, even essential industries are not always prosperous and frequently pass through periods of depression. Such a situation faces the manufactures of silk goods at the present time. This condition is due to a number of reasons among which are "over-capacitation" in the industry, style changes, fluctuating raw material prices, and competition from artificial silk producers.

Although in recent years there have been a number of consolidations, there are still a large group of small independent producers who are continually striving to get business away from their competitors. This has resulted in a condition of severe price-cutting and unsatisfactory earnings. In the past, producers have failed to keep their outputs closely aligned with actual consumer demand. Little can be accomplished in this direction until production is kept down within the limits of consumer demand and consumption. Further consolidations and liquidations of unprofitable enterprises will help, but it may be necessary to wait until the demand catches up with the productive capacity of the industry before substantial improvement will obtain. Steps have already been taken to bring about a better spirit of cooperation between the small producers, and ways have been suggested to improve the technical methods and the distribution of the product. However, to date little has been accomplished of tangible value.

The price of raw silk is a very important element, as a very large part of the cost of silk goods is represented by the cost of the raw materials. Silk prices in recent years have fluctuated widely, and it is always difficult to make a satisfactory profit under such conditions. As it is transported from distant points and is readily affected by climatic conditions which may cause a deterioration in its quality, its price is often subject to sudden changes. Silk prices have been firmer during 1928 and the trend is apparently still upwards.

Style changes are often very serious and public fancy may change without notice, thereby flooding the market with obsolete goods. At the time of writing, transparent velvets, print goods,

and novelty lines are popular and such lines as satins are in poor demand. This uncertainty has kept the prices of standard silk goods at low levels despite the rise in raw silk, and consequently the margin of profit is very narrow.

Rayon has become, to a certain extent, a competitor of silk and is doubtless a factor in the present unfavorable situation. While rayon has displaced silk somewhat, it is still in its infancy and even if it were superior to silk, the total supply would be insufficient to supplant the natural product. However, silk is still superior in many respects and has qualities which place it in a category by itself. Many feel that rayon will simply be another textile and that it will not materially displace any that is now in common usage. An interesting study of this situation was made by the *Magazine of Wall Street* and in a recent publication the following conclusions were drawn based upon a canvass of a number of silk executives:

"Rayon has interfered with the consumption of cotton more than with the consumption of silk; it has not hurt the silk glove or full fashioned silk hosiery business at all; it is being used to an increasing extent in conjunction with silk in the manufacture of piece goods and underwear; it has definitely injured some of the companies specializing in finer quality silk goods; on the other hand, bowing to the dictates of fashion, quite a number of silk goods producers have been able to combine rayon and silk in such a manner as actually to increase their earning power. It is the disposition of most silk men to regard rayon as a fibre with its own qualities and uses as distinct from silk as either cotton or wool. Only 20% of the answering executives unqualifiedly state that silk consumption has been reduced by the wide introduction of rayon; not one, however, seems to think that silk consumption has been stimulated."

In summary, it would appear that the industry is still badly depressed, but recent developments indicate that executives are striving to rehabilitate the industry.

History.—In 1882, Belding Bros. & Co. was incorporated in Connecticut to acquire a copartnership organization, dating back to 1863. In 1909 it acquired the Richardson Silk Co. and the Carlson Currier Co., and in 1910 it completed its control of the Winsted Silk Co. One year later it added Hackenburg and Co., Inc. Its most important acquisition, however, was the Heminway Silk Co. in 1925. The latter company controlled a business which had been in existence for seventy-five years and after its acquisition the name of the company was changed to the Belding-Heminway Company.

It is evident, therefore, that the business is well-established and has grown through acquisitions as well as from internal development.

Management.—The management is generally regarded as experienced, able, and progressive. Prior to the consolidation in 1925, the management was largely a family affair, but at that time, the best of both managements was retained and more recently new blood, representing prominent banking interests, was introduced.

Capitalization.—The capitalization was as follows:

	June 30, 1928
Funded Debt—convertible 6% notes—1936	$3,250,000
Preferred Stock ($100 par)	$ 109,300
Common Stock (no par)	415,032 (shares)

The funded debt consists solely of an issue of convertible 6% notes. These notes are unsecured but the indenture provides that no mortgage, except with the consent of three-fourths of the outstanding noteholders, can be placed on the property without equally securing these notes with any bonds which may be issued under it. As there are no prior liens, the notes have a senior claim on the assets, but must share this claim with the general creditors who, however, on June 30, 1928, were of almost negligible importance.

The issue was originally outstanding to the amount of $5,410,-

000, but $2,160,000 of the notes had been purchased and were held in the treasury on June 30, 1928. This policy of retiring the notes voluntarily is indeed a favorable factor, as the issue has no sinking fund.

The notes are convertible at any time prior to maturity or redemption into 20 shares of common stock for each $1,000 par amount of notes. The convertible feature has no value at the present time but may in the future. They are redeemable through 1928 at 103 and interest, at 102 and interest thereafter through 1931, at 101 and interest thereafter through 1934, and at par thereafter. As the notes are selling below par, the callable features have no significance at present, but it is conceivable that if the company improves sufficiently, this may become a factor. However, it is more economical for the company to purchase the bonds than to call them at present.

The notes were issued in connection with the acquisition of the business and properties of the Heminway Silk Co. In view of the fact that the latter company had shown deficits of $66,510 and $58,864 for the years 1924 and 1925 respectively, and net tangible assets at the close of 1925 amounted to only $3,410,948, it appears that a price of $5,410,000 in convertible notes was excessive. It is evident that the new company was forced to pay heavily for the goodwill of the Heminway Silk Co. This has been a serious handicap throughout the recent years of depression, and the wisdom of the deal can only be ascertained after conditions have returned to a more normal state.

In view of the comparatively small amount of notes outstanding, their marketability is only fair. This coupled with the poor condition of the industry does not render them an ideal medium for collateral. However, they are listed on the New York Stock Exchange and could be sold without much difficulty and would undoubtedly be accepted as collateral.

The preferred stock is a cumulative 7% issue. It is a very small issue, and as there is practically no market for it, it is not suitable for the average investor. In fact, there is no public

interest in this issue and a detailed discussion seems unnecessary. As the total dividend requirements on the preferred amount to only $7,651, they will probably be paid rather than allowed to accumulate. The preferred stock was originally issued as a stock dividend to the common stockholders from 1919 to 1925. Of the total amount of $2,500,000 issued, $2,365,900 has been retired, and there is now outstanding a par amount of only $109,300. The smallness of the issue would militate against its acceptance as collateral.

The common stock is without par value, and as there are no participating issues ahead of it, it is entitled to all earnings and assets above those required to satisfy the senior bond and stock issues. The stock is listed on the New York Stock Exchange and is actively traded in. Dividends prior to 1921 were not generally reported, but appear in the New York Stock Exchange listing circular A7064. Cash dividends of from 5% to 20% were paid up to 1926 and stock dividends as high as 100%. From 1921-1924 liberal rates ranging from 14% to 36% were paid on the old $100 par stock of Belding Bros. In 1925 6% was paid on the $100 par stock and 75 cents quarterly on the no-par stock. Dividends were continued even though not earned on a 75-cent quarterly basis until April, 1927, when they were reduced to 50 cents. On July 1, 1928, they were passed owing to poor earnings.

Security as to Assets.—It will be noted from the statistical and ratio analysis of the comparative balance sheets since 1925 in Figures 31 and 32, that the trend of current assets has been downward, and that while current liabilities have been reduced, the trend of the net working capital has also been downward. This is not a favorable sign and is indicative of the adverse conditions in the industry. However, the company has managed to maintain a high degree of liquidity and it is interesting to note that the greatest decline has occurred in its inventory account, which is the least liquid of its current assets. While inventories are fairly large, the company has not allowed goods to accumulate

during the period of depression, and this in itself is indicative of good management. The current position on June 30, 1928, was strong despite a certain shrinkage in recent years, and there is no question as to the ability of the company to meet its current obligations. Cash and call loans alone were over 6.3 times current liabilities and current assets were many times current liabilities.

The fixed assets of the company have declined in recent years, as indicated by the horizontal trend percentages, in which total tangible fixed assets net of reserves were 78% of the amount at the time of consolidation in December, 1925. This has been due to a policy of liquidation and centralization of production facilities, and in a large measure to liberal depreciation write-offs. Depreciation alone at June 30, 1928, was 25.10% of total net assets or net worth, and represented about 51% of the book value of plant and properties. In the income statement for December 31, 1927, $240,085 was added to depreciation reserves, or approximately 5.8% of the book value of buildings, machinery, and equipment as of the close of the previous year, December 31, 1926. One would not expect the company to expand its fixed asset account during a period of declining earnings and generally unsatisfactory trade conditions.

The intangible assets show very little change, and while it may be questioned whether the poor earning power of the company would warrant even as high a valuation as that at which they are carried on the books, they do not constitute a very large proportion of the total assets. The goodwill item of over $1,000,000 no doubt represents the excess cost over the actual physical value of the properties of the Heminway Silk Co. acquired in 1925. The wisdom of this move has already been previously discussed.

Of the total net assets available for the bonds and stocks of the company at June 30, 1928, 64% was represented by the net working capital, 23% by fixed assets and investments, and 13% by intangibles. It would appear that the assets are fairly liquid and represent sound values with the exception of the intangibles. On June 30, 1928, there were available for each $1,000 incon-

Belding-Heminway Company

COMPARATIVE BALANCE SHEET ANALYSIS—YEARS ENDING DECEMBER 31, 1925 TO JUNE 30, 1928

No.	ACCOUNT	Dec. 31, 1925	% of Total Net Assets	Dec. 31, 1926	% of Total Net Assets	1926 % of 1925	Dec. 31, 1927	% of Total Net Assets	1927 % of 1925	June 30, 1928	% of Total Net Assets	June 30, 1928 % of Dec. 31, 1925
1	CURRENT ASSETS											
2	Cash on Hand and in Banks	832,126	8.10	1,747,172	17.8	210.0	476,764	11.40	129.4	320,096	8.82	98.6
3	Call Loans	—	—	—	—	—	600,000			500,000		
4	Notes Receivable (Net)	75,408	.73	—	—	—	66,034	.70	87.6	52,731	.57	69.9
5	Accounts Receivable (Net)	2,061,316	20 07	1,727,518	17.60	83 8	1,280,517	13 55	62 1	1,432,152	15.40	69.5
6	Inventories (at cost or market)	8,264,218	80 45	6,463,931	65 86	78 2	6,013,530	63.97	73.1	5,794,362	62.32	70.1
7	Accrued Interest	—	—	—	—	—	73,298	.77	—	81,652	.88	—
8	Total Current Assets	11,233,098	109.35	9,938,624	101.26	88.5	8,540,143	90.39	76.0	8,180,993	87.99	72.8
9	Less: CURRENT LIABILITIES											
10	Accounts Payable	312,756	3.04		—	—	35,231	.37	11.3	69,421	.75	22.2
11	Accrued Expenses	36,068	.35		—	—	28,107	.30	77.9	15,575	.17	43.2
12	Dividend Payable	314,399	3.06	none	—	—	—	—	—	—	—	—
13	Federal Income Payable and Acc'd	198,987	1.94	236,165	2.41	—	72,685	.77	36.5	44,777	.48	22.5
14	Total Current Liabilities	862,210	8.39	236,165	2.41	27.4	136,023	1.44	15.8	129,773	1.40	15.1
15	NET CURRENT ASSETS	10,370,888	100 96	9,702,459	98 85	93 6	8,404,120	88.95	81.0	8,051,220	86.59	77.6
16	Add: TANGIBLE FIXED ASSETS											
17	Land and Real Estate	224,832	2.19	223,846	2.28	99.6	214,137	2.27	95.2	213,140	2.29	94.8
18	Buildings, Machinery and Equipment	4,412,555	42 95	4,541,276	46 27	102 9	4,221,400	44 71	95 7	4,239,015	45.60	96.1
19	Less: Reserve for Depreciation	2,236,599	21 77	2,282,013	23.25	102 0	2,252,695	23 84	100.7	2,333,533	25.10	104.3
20	Buildings, Machinery, Etc., Net	2,175,956	21 18	2,259,263	23 02	103.8	1,971,705	20.87	90 6	1,905,482	20.50	87.6
21	Investments at Cost	122,460	1 19	834,260	8.50	81 3	767,560	8 12	626.8	706,560	7.60	577.0
22	Investments in Real Estate (Under contract for sale)	1,078,825*	10.50	—	—	—	—	—	—	—	—	—
23	Total Tangible Fixed Assets	3,602,073	35.06	3,317,369	33.80	92 1	2,953,402	31 26	82.0	2,825,182	30.39	78.4
24	NET TANGIBLE ASSETS	13,972,961	136 02	13,019,828	132 65	93 2	11,357,522	120 21	81.3	10,876,402	116.98	77.8

No.	Account	Dec. 31, 1925	% of Total Net Assets	Dec. 31, 1926	% of Total Net Assets	1926 % of 1925	Dec. 31, 1927	% of Total Net Assets	1927 % of 1925	June 30, 1928	% of Total Net Assets	June 30, 1928 % of Dec. 31, 1925
24	NET TANGIBLE ASSETS	13,972,961	136 02	13,019,828	132 65	93.2	11,357,522	120.21	81 3	10,876 402	116 98	77 8
25	Add: INTANGIBLE ASSETS											
26	Water Power Rights	64,500	63	—	—	—	29,500	31	45 7	29,500	.32	45 7
27	Deferred Charges	378,325	3 68	319,949	3 26	84 6	284,896	3 02	75 3	313,866	3 38	83 0
28	Inventory of Supplies (at cost)	212,660	2 07	321,303	3 27	151 2	321,810	3 41	151 3	273,548	2 94	128 6
29	Goodwill	1,053,856	10 26	1,053,856	10 74	100 0	1,053,856	11 15	100 0	1,053,856	11 34	100 0
30	Total Intangible Assets	1,709,341	16 64	1,695,108	17 27	99 2	1,690,092	17 89	98 9	1,670,770	17 98	97 7
31	Total Net Assets for Conv. Gold Notes	15,682,302	152 66	14,714,936	149 92	93 8	13,047,614	138 10	83 2	12,547,172	134 96	80 0
32	Convertible 6% Gold Notes (Net)	5,410,000	52 66	4,900,000	49 92	90.6	3,600,000	38 10	66 5	3,250,000	34 96	60 1
33	TOTAL NET ASSETS OR NET WORTH	10,272,302	100.00	9,814,936	100.00	95.5	9,447,614	100 00	92 0	9,297,172	100 00	90 5
34	REPRESENTED BY:											
35	7% Preferred Stock $100 par	109,300	1 06	109,300	1 11	100 0	109,300	1 16	100 0	109,300	1 18	100 0
36	Common Stock no par	6,917,200	67 34	1,507,200	15 36	21 8	1,507,200	15 95	21 8	1,507,200	16 21	21 8
36A	415,032 Shares (original val. $16⅔)											
37	Capital Surplus	0	—	5,410,000	55 12	—	5,410,000	57 26	—	5,410,000	58 19	—
38	Profit and Loss Surplus	3,245,802	31 60	2,788,436	28 41	85 9	2,421,114	26 63	74 6	2,270,672	24 42	70 0
39	TOTAL CAPITAL AND SURPLUS	10,272,302	100 00	9,814,936	100.00	95.5	9,447,614	100.00	92.0	9,297,172	100 00	90.5

* Investments in real estate under contract for sale = $1,303,825 less liability and deposit under contract of $225,000 = $1,078,825.

Figure 31. Comparative Balance Sheets Prepared for Limited Analysis

Belding-Heminway Company

COMPARATIVE RATIOS—DECEMBER 31, 1925, TO JUNE 30, 1928

	Dec. 31, 1925	Dec. 31, 1926	Dec. 31, 1927	June 30, 1928
CURRENT RATIO	130%	421%	628%	630%
8 ÷ 14	13.02 — 1	42.08 — 1	62.81 — 1	63.04 — 1
QUICK RATIO	345%	147%	134%	184%
2 + 3 + 4 + 5 + 7 ÷ 14	3.45 — 1	14.71 — 1	134.3 — 1	183.9 — 1
ASSETS PER $1,000 BOND				
31 ÷ 32 (a) Including Intangibles	$2,898	$3,003	$3,624	$3,861
24 ÷ 32 (b) Excluding Intangibles	$2,583	$2,657	$3,155	$3,347
BOOK VALUE OF COMMON STOCK				
33 — 35 ÷ 36A (a) Including Intangibles	$24.49	$23.39	$22.50	$22.14
24 — 32 — 35 ÷ 36A (b) Excluding Intangibles	$20.37	$19.30	$18.43	$18.11
PER CENT EARNED ON INVESTED CAPITAL				
46 ÷ 33 (a) Including Intangibles	13.0%	8.1%	5.5%	(6 mos.) .98%
46 ÷ 24 — 32 (b) Excluding Intangibles	15.6%	9.8%	6.7%	1.19%
PER CENT OF DEPRECIATION ON PLANT AND EQUIPMENT				
19 ÷ 18 (a) Accumulated	50.7%	50.3%	53.3%	55.0 %
41 ÷ 18 (b) Current from Profit and Loss Account	4.3%	5.5%	5.8%	(6 mos.) 2.7 %
MARKET PRICE OF				
(a) Bonds	†H.— 100⅛ L.— 100	H.— 100⅞ L.— 94¾	H.—99 L.—94	H.— 99¾ L.— 90
(b) Common Stock	*H.— 41¾ L.— 37	H.— 39¾ L.— 26	H.—27¼ L.—15½	H.— 22 L.— 12

* Offered at $39.50 per share.....6/1/25
† Offered at 99¾..... 12/25

Figure 32. Ratio Analysis of Comparative Balance Sheets

vertible notes assets to the amount of $3,861, including intangibles, or $3,347 exclusive of intangibles. It would appear, therefore, that the bonds are well protected by assets. The common stock had a book value of $22.14 per share, of which $4.03 was represented by intangibles. On the basis of a current market value of around $10 for the common stock, it would appear that the assets are substantial. It should be noticed from the statistics accompanying this analysis that assets per bond have been increasing since 1925 and that there has been little change in the book value of the stock.

Comparative Profit and Loss Statements.—Earnings are more important than asset values, and as a rule assets have very little value beyond that for which they can be liquidated. The trend of earnings has been downwards in recent years as indicated in Figure 33. The number of times fixed charges have been earned before taxes has fallen off from 3.66 in 1926 to 1.84 in the first six months of 1928. This is not a favorable sign, but there is some gratification in the fact that the company has been able to cover its fixed charges under the adverse conditions existing in the industry. Despite this unsatisfactory situation the company has retired a substantial part of its bond issue, as indicated by a decline in fixed charges of from $343,037 in 1926 to $117,910 in the first six months of 1928. Naturally this policy has kept the margin above fixed charges at a higher level than would have been possible if all of the original issue were still outstanding.

Earnings per share on the stock have declined from $3.02 in 1925 to 21 cents in the first six months of 1928. This is a poor showing. As has been stated before, dividends also declined and were passed in the second quarter of 1928. From the point of view of recent earnings, then, the stock is not attractive.

In conclusion, it would appear that while the bonds are well secured as to assets, the decline in earnings prevents them from being a high-grade investment. They are distinctly second-grade,

Belding-Heminway Company

Comparative Profit and Loss Account—December 31, 1925 to June 30, 1928

No.	Account	Dec. 31, 1925	% of Net Income	Base %	Dec. 31, 1926	% of Net Income	1926 % of 1925	Dec. 31, 1927	% of Net Income	1926 % of 1925	6 mos. Ended June, 1928	% of Net Income
40	Net Income from Operations	1,719,499	100	100	1,507,453	100	87	1,121,792	100	65	330,650	100.
41	Deduct: Depreciation	188,842	10.98	100	250,623	16 63	132	240,085	21.40	127	113,379	34.29
42	Net for Interest	1,530,657	89.02	100	1,256,830	83 37	82	831,707	78 60	57	217,271	65.71
43	Deduct: Interest and Amortization	—	—	—	343,037	22 57	—	237,069	25 59	—	117,910	35.66
44	Net for Taxes	1,530,657	89 02	100	913,793	60.62	59	594,638	53.01	38	99,361	30.05
45	Federal Income Taxes	195,100	11 35	100	116,590	7 73	69	72,635	6 18	36	8,332	2 52
46	Net Profit for Year	1,335,557	77 67	100	797,293	52 89	59	521,952	46 53	39	91,029	27 53
47	Deduct: Preferred Dividends	80,544	4 68	100	7,651	.51	8	7,651	.68	8	3,825	1.16
48	Net for Common Stock	1,255,013	72 99	100	789,642	52.38	63	514,301	45.85	40	87,291	26 37
49	Deduct: Common Dividends	726,306	42 24	100	1,215,096	82 60	171	830,051	74.	114	207,316	62.76
50	Net Profit or Loss to Surplus	528,707	30.75	100	(455,154) deficit	(30 22)	(186)	(315,763) deficit	(28.15)	(160)	(129,312) deficit	(36.39)
51	Add: Surplus at Beginning of Year	(516,934) deficit	(31 81)	100	3,245,803	215.32		2,783,436	218.57	—	2,421,115	
52	Profit and Loss Surplus for Year	(18,227) deficit	(1.06)	100	2,790,349	185.10		2,472,673	220.42		2,300,803	
53	Add: Credits—Adjustment Fed. Inc. Tax	—	—	—	* —	—		4,556	.41		799[a]	
54	Investments owned, not prev. entered	—	—	—	450	.03		—	—		—	
55	Adjustment of Dep. of prior	—			144,906	9 62						
56	Total Surplus	—			2,935,705	194 75		2,477,229	220 83		2,301,602	
57	Deduct Charges:	—										
58	Additional Fed. Inc. Tax 1922/3/5	—			2,400	.16		40,917	3.65		518[b]	
59	Expenses for Refinancing and Acquisition of Heminway Co.	—			144,869	9 61		15,193*	1.35		886[c] 20,204[d] 9,292[e]	
60	Total Charges	—			117,269	9 77		56,115	5 00		30,930	
61	Final Balance Sheet Surplus	(18,227) deficit	† 1 06)		2,788,136	184 98		2,421,114	215.83		2,270,672	

Profit and Loss Account for year ending December 31, 1925, compiled by consolidating available accounts of the two companies as indicated in the N. Y. Stock Exchange listing circular. All others from the annual reports of the company.

† Wiped out by Financing and Consolidation.

* Loss on sale of Mill Properties.

[a] represents refund of 1927 Mass. Corp. Tax.

[b] represents Taxes paid 1925 to England.

[c] represents Taxes paid 1922/3 to N. Y. State.

[d] represents 20,000 expenses of prior year and $204 paid as adjustment of Fed. Tax 1927.

[e] represents Loss on sale of Seamless Hosiery Co.

Figure 33. Comparative Profit and Loss Statement Prepared for Limited Analysis (see also page 225)

Account	Dec. 31, 1925	Dec. 31, 1926	Dec. 31, 1927	6 mos. Ending June, 1928
RATIOS:				
Times Earned Interest and Charges before Taxes	—	3.66	3.07	1.84
Times Earned Preferred Div. Requirements	$16.58	100.21	68.22	23.80
Times Earned Interest, Charges, and Preferred Dividends (as paid above) after Taxes	—	3.25	2.75	1.72
Earned Per Share of Common 415,032 shares outstanding at end of year	$ 3.02	$1.90	$1.23	$ .21
Paid on Common per share	$ 1.75* average	$3	$2	$ .50

* 6% on old par and 75¢ on new no-par paid by Belding Bros., none by Heminway.

although their position is not particularly precarious. They should, however, if purchased, be followed closely and checked at frequent intervals. Until conditions in the industry improve, they are not suitable for the investor who is primarily interested in safety. While the asset value of the stock, quoted around 10 at the time of writing, is apparently substantial, the earnings per share have declined to such a low level that the stock is devoid of investment merit. It is purely a speculation, and purchases should be deferred until the company shows tangible signs of improvement. In view of its excellent management and commanding position in the industry, it is highly probable that the company will eventually improve its position under favorable trade conditions. At best then, the stock can be considered only as a long-pull speculation.

CHAPTER XI

THE PRESENTATION OF THE ANALYSIS

Importance of the Report.—When the facts of an analysis are to be submitted to others in a formal report, the reader should appreciate the importance of presenting the facts in such a way as to develop a coherent and descriptive summary of the results. All reports on industrial analysis are informatory in nature. They are written to inform readers of the status of a specific enterprise. Accordingly, they should be therefore prepared to cover the situation in detail without being burdensome in length.

A report should always begin with a distinct description of the scope of the investigation which has been made. Unless this is done, the reader is unable to tell whether the report is the result of a ten-minute or a ten-week study. All reports should begin with a statement such as: "We have made a complete analysis of the Radius Rubber Company covering plant inspection, detailed audit analysis, organization study, and a trade check." Even though the study has been less extensive, its scope must likewise be defined.

The salient features should then be briefly covered. Good and bad features, advantages and disadvantages, should be discussed. The features should be summarized rather than covered in great detail. Important items should be discussed in separate paragraphs.

A summary should be included listing separately the favorable and unfavorable features. Many writers prefer putting this summary at the beginning of the report, so as to portray quickly and briefly a given industrial picture. However, a more coherent and readable report results from the order of treatment as outlined.

From the summary of favorable and unfavorable features, the analyst should draw a specific conclusion, and indicate his personal approval or disapproval of the business. A report should not leave the reader without a definite recommendation by the analyst.

At this point two actual reports made in practice have been inserted. One is an investigator's report made specifically for investment bankers; the other an annual report of the American Writing Paper Company.

Sample of Investigator's Report.—In the first report the names of the company and the individuals have been changed, as well as certain of the figures. This has been done because such material would not normally be available for publication. It is important to note the definition of the scope, salient features, summary and conclusions.

Report of Radius Rubber Company

June 11, 1927.

MEMORANDUM TO: Buying Committee
FROM: John Smith, Assistant to the Vice-President in Charge of Buying
SUBJECT: Final Report—Radius Rubber Company

SCOPE. This report is rendered after a thorough inspection of the company's property at Canton, Ohio. It includes interviews with Mr. A. B. Jones (who brought the business to us); Mr. H. T. Smith, Sales Manager; Mr. J. F. Brown, Secretary of the Company; and Mr. C. D. Black, Production Manager. We have also gone over the accounts of the company for the past five years. We have not interviewed the president, Mr. C. D. White, because he was not in his office at Canton at the time this study was made. In the limited time available, we were unable to make a thorough trade check.

INDUSTRY. The rubber tire industry has shown rapid development and there does not seem, on the whole, to be a condition of over-production. Statistics indicate that the consumption is growing sufficiently to absorb the rapidly expanding output.

The current year is furnishing the automobile tire manufacturing industry with the largest volume of business in its history. Official figures show that the first quarter shipments for 1927 were 38% larger than the corresponding period in 1926.

Viewed from the standpoint of earnings, the conditions in the industry are unsettled. While a certain group of the leading tire companies are showing good profits, others are finding it difficult to do so at present tire prices. The principal reason for this situation appears to be the fact that some manufacturers have completely liquidated the high cost of crude rubber accumulated in 1926, others are still struggling with their high cost stocks. It is believed, however, that the 1927 business will be at least 10% greater than the 1926 business for the whole industry.

Business. The Radius Rubber Company is a manufacturing organization making tires and tubes and tire repair material. The business is divided as follows:

Tires	83%
Tubes	10%
Repair Material	7%
	100%

The Radius Rubber Company manufactures tires and sells them at 15% above cost to its fully owned subsidiary, the Radius Rubber Company of Pennsylvania.

Plant. The company has a modern manufacturing plant in Canton, Ohio. The plant is served by the B. & O. Railroad and has two railroad sidings.

The buildings are of brick construction with six-inch floors. They are in good state of repair, some of the buildings being practically new. The equipment is in good shape, although the plant layout is not ideal. The routing of the work through the plant is in some instances cumbersome, but not so much as to make it objectionable.

The plant value in terms of capacity and in terms of sales is a little high, as shown by the following comparison:

Company	Value per 1,000 Tires	Value per $1,000 Sales
Radius	$550	$200
Seiberling	485	200
Indiana	274	142
General	236	68

These are comparable companies, but the high Radius plant value can be explained in that this plant is now unbalanced. The expenditure of approximately $150,000 would bring the capacity of the plant up to 3,000 tires and 5,000 tubes per day as against its present capacity of 1,800 tires and 3,000 tubes. The expenditure of $40,000 required in the curing room will bring the capacity to about 2,000 tires per day and 3,000 tubes, which is in keeping with the company's sales. There is consequently considerable floor space vacant in the plant so that the additional expenditure to bring the plant capacity up to 3,000 tires and 5,000 tubes per day calls only for equipment, as no further building space is required. On the basis of this capacity, sales would be about $15,000,000 per year. If the company achieves these sales, naturally the plant valuation will be in line with that of other rubber companies, both from a standpoint of production and sales.

In short, the company's assets are in good shape; the plant can be balanced for about $40,000, but there would be no sense in bringing the plant capacity to its maximum unless such expansion could be properly supported by the sales department.

Sales. The company sells its products through the Radius Rubber Company of Pennsylvania, its selling subsidiary. This company employs about 40 salesmen and branch managers on a straight salary basis. The country is divided territorially and the salesmen operate in their respective regions. Efforts are made to sell on an exclusive agency basis.

Mr. H. T. Smith, the present Sales Manager, has been with the company since 1923, and sales in that time have increased 180%; that is, the sales for 1926 were 280% of what they were for 1923. On the basis of this growth, the net sales for 1927 should be about $7,800,000. The sales for the first seven months were $3,100,000, which will bring the figure for the year a little below this estimate. However, Mr. Smith is confident that he will reach close to $7,800,000 for the full twelve months.

The problem resolves itself largely into a question of developing sales further. We were impressed with Mr. Smith and believed the record of selling growth that he has shown since his advent with the company substantiates our belief that he is competent.

Organization. The Radius organization seems satisfactory. The company is organized along definite lines. Mr. C. D. White, President of the Company, is not very active and Mr. Smith functions directly as Chief Executive. Mr. J. F. Brown, who is in charge of the accounting, is the chief internal operating man. Both Mr. Brown and Mr. Smith have had long experience in the rubber tire manufacturing business.

Board of Directors. The Board of Directors consists of local business men whom we have checked in some detail. These men are all attentive to Radius affairs. We can offer no criticisms of the Board.

Product. The company makes the Radius tire. It makes this tire in all standard sizes of cord construction, both high-pressure and balloon tires. It also makes, in small quantities, a secondary line that sells on a competitive basis. It does a small amount of special brand business. In order to complete its line, it also makes a line of repair materials, which constitutes about 7% of its sales.

Rubber Losses. This company has come to grief through writing off at the end of 1926 rubber losses amounting to $1,050,000. These losses include the "write-down" of rubber contracts calling for delivery in 1927-1928, amounting to $500,000. In other words, the company has cleaned its slate on this phase of its business and is now buying rubber for immediate delivery to meet requirements. The rubber commitments of 1925 and 1926 are traceable to Mr. C. D. White. The rubber now is being purchased to cover current sales requirements by the Executive Committee, composed of Messrs. White, Smith, and Brown.

We believe that the company on this basis will solve its rubber purchasing difficulties, although the fact remains that Mr. White who is responsible for the past losses is still with the company. His activities now, of course, are restricted through the retention of Messrs. Smith and Brown, on the Executive Committee.

Past Performances. A review of the income account shows profits of about $900,000 in the years 1924 and 1925. It is natural to inquire why the company could not have used these profits to fortify itself in 1926. Mr. Smith claims that at the time he joined the company, the accounts were in such bad shape that he had to liquidate such items as Government tax arrearages of $200,000, a preferred dividend arrearage of $140,000, and bad debts of $60,000, in addition to using some of the profits for setting up adequate reserves. The history of the company before the advent of Messrs. Smith and Brown is distinctly unsatisfactory and in my opinion may react unfavorably on the sale of the securities of this company.

Comparative Balance Sheets. The comparative balance sheets since 1923 reflect the unfavorable condition of the business. The current assets have shown only a small increase, while the current liabilities have expanded rapidly. The working capital position has remained about constant in spite of the large increase in the volume of business, except

for 1925, when the working capital decreased noticeably. As of July 31, 1927, there appears to be a good recovery in working capital, although the current liabilities are still too high. Depreciation is being provided for in the fixed asset account, and reserves are being set up for bad debts, etc. The contingent liability arises out of notes and trade acceptances discounted, but over $100,000 of this item has already been liquidated, and the company reports practically no losses on this account.

Profit and Loss Statements. Profit and loss statements show an excellent increase in the net sales. The cost of sales has been kept in line and so have the selling expenses. Depreciation has been provided for, but the one item which upsets the entire earnings statement is, of course, the rubber losses. The company is writing off depreciation at the rate of $100,000 a year, which is adequate. The earnings for the first seven months of 1927, after depreciation of $55,000 and after reserves for bad debts and interest, amount to $355,000. The net sales in this period were $3,100,000, but should have been considerably higher had the company not been forced to temporarily discontinue its advertising program. This matter has now been straightened out and the company expects to recover even more fully in the remaining five months of the year.

Financial Requirements. The company will have to meet the following obligations which will require cash of $100,000, if the account is to properly balance:

Bank Notes	$ 675,000
Notes to Creditors	543,000
Two Year Notes	151,000
Cash	100,000
	$1,469,000

The $40,000 required for the curing room can be obtained from the cash account, inasmuch as many of the receivables will be liquidated during September. Assuming further that the merchandise creditors can be satisfied on a discount basis, the company could just about meet the above obligations from $1,500,000 of suggested financing. However, to keep the capitalization in line with the capitalization of other rubber companies, it would be advisable not to go over 35% in bonds, providing, therefore, an issue of only $1,100,000, and the capitalization would be about as follows:

Bonds	$1,100,000	32%
Preferred and Common Stock	2,400,000	68%
	$3,500,000	100%

This means that at least $400,000 will have to be raised in junior money, preferably through the sale of common stock, because on the basis of the present capital set-up, the common stock has practically no book value. It is problematical whether this can be done.

Favorable Features.

1. Mr. Brown has successfully cut his production costs.
2. Mr. Smith has succeeded in expanding sales.
3. Rubber purchases are now made by the executive committee.
4. Purchases are made only to meet requirements.
5. Production is budgeted with sales.
6. Only a small amount of money is needed to increase plant capacity.
7. Assets are in good condition.

Unfavorable Features.

1. Performance prior to 1923 was unsatisfactory.
2. The rubber losses are large.
3. The financial requirements are larger than the funded debt financing will provide.
4. There are dividend arrearages on the preferred stock which is cumulative.
5. 1924 and 1925 profits have been absorbed in wiping out earlier mistakes made by a former management.

Résumé. Because of the successful performance of Mr. Smith in production, and the successful performance of Mr. Brown in sales, it would be interesting and profitable financing to work out this business. However, in view of past performance of the company and the recent rubber losses, it is difficult to see how the financing can be worked out without the injection of considerable junior money. Also, it is not clear how our sales organization could move these debentures in the face of the recent unsatisfactory record of the company.

Respectfully submitted,
Investigation Department
By John Smith

Example of a Routine Annual Report.—An excellent example of an annual report and accountant's certification will be found in the following report of the American Writing Paper Company for the year ending December 31, 1927. The message from the president is followed by the audit of the company's books certified by F. W. Lafrentz & Co. It is of interest to note

how the accounts are detailed in the balance sheet and the profit and loss statement. Depreciation seems to be omitted, but reference to the very descriptive letter of transmittal and certification shows how depreciation is provided for.

Annual Report of the American Writing Paper Company, Incorporated—1927

Holyoke, Mass., April 1, 1928

To the Stockholders
of American Writing Paper Company, Incorporated

Your Board of Directors submits herewith its first Annual Report of the company for your consideration.

The company, through a reorganization, is the successor of the American Writing Paper Company, which was organized in 1899, and consisted of thirty-three unit mills. From time to time certain of these mills were sold, until at the time of the sale to the new company the properties consisted of twenty-six mills. Of these twenty-six mills, sixteen were selected to be retained as the manufacturing units of the new company, fourteen of which are located in the City of Holyoke, Mass., one at Windsor Locks, Conn., and one at Unionville, Conn. The remaining ten mills were set aside for sale, and of these six have been sold. The estimated proceeds to be derived from the sale of the four remaining mills are about $489,000.00 as shown in the balance sheet under the item "Net Amount Realizable through Reorganization Committee and on Sale of Assets, etc."

The old company for a period of four years prior to 1927 was operated under receivership and was self-sustaining from its operations, exclusive of bond interest.

During receivership the funds of the company were insufficient to rehabilitate the properties; therefore at the time of reorganization provisions were made for necessary rehabilitation and improvements.

During the year 1927 there was expended for rehabilitation, maintenance and repairs the sum of $711,213.34, of which $179,963.95, as actual rehabilitation, was charged to capital assets, and $531,249.39, as maintenance and repairs, was charged into operating costs. Some of the amount charged to maintenance and repairs, under liberal interpretation of expenditures, might also have been charged to capital assets, but under our conservative policy has been charged to operating costs.

By the expenditure of these funds the properties have been greatly improved and are today more efficient than for many years, resulting in greater production, better qualities, and lower manufacturing costs. To

bring about further economies in production, and to place the company's physical properties in a condition comparable to the best of other competitive mills making similar grades, an additional expenditure of approximately $1,000,000 over a period of eighteen months will be necessary. This proposed expenditure was contemplated at the time of the reorganization. These funds can be provided for by the sale of the Choral Properties, Inc., from operating profits, and from a reduction of inventories.

During the year 1927 the net sales were $13,339,530.04 as compared with $14,541,386.01 in the year 1926, but through economies resulting from the judicious expenditures for rehabilitation, through concentration of effort toward mass production, and through the greater efficiency of our employees, the net betterment in results from the lower volume of business was $401,763.35, after deducting $23,384.17 for Federal Taxes for the year 1927.

The equipment was operated 87% of normal, or 70% of its capacity. The equipment, therefore, is capable of providing for expansion in sales, and our efforts are now directed toward increasing the volume of profitable business.

The old company before reorganization operated twenty-six mills and during the years 1924, 1925, and 1926 produced an annual average of 70,400 tons. The average number of mill wage-earners for these years was 2,574, making an average of 27.3 tons each.

The new company, operating sixteen mills, produced in 1927, 69,000 tons with 2,007 mill wage-earners. The average tons produced per wage-earner was 34.8 tons, an increase of 7½ tons per man. This notable accomplishment has resulted from the improved condition of our equipment, the concentration of production within fewer mills, and the remarkable personal interest shown by the employees in their work. The labor turnover in 1927 was only 30% as compared with 41% for the three preceding years.

The business during the year was about 8% less than the preceding year. The loss in volume, however, was due to the dropping of unprofitable business. The sales of our commercial lines not only were maintained, but were slightly increased. Our additional profits must come from further economies in operation and distribution, as well as from increased sales, or a higher average price for our products.

We are keeping before us the following essentials in business:

1. The necessity for company profits.
2. Lower manufacturing costs.
3. Standardization of products and qualities.
4. Elimination of waste in production and distribution.

Realizing that one of our chief problems is a sales problem, we are increasing our efforts to build sales. We have established a new department, known as the "Paper Users' Standardization Bureau," the object of which is to render a service in standardizing papers used by large corporations, and through such service to save money for our clients, and incidentally to secure a greater portion of their paper requirements. Results to date are very satisfactory and have justified the additional expense. We are working constantly to create Special Papers of a technical character to avoid that keen competition which exists in the sale of regular commercial or business papers.

During the past year greater attention has been given to our Engineering Department. Competent managers have been assigned to its three principal divisions, namely—"Engineering," "Maintenance," and "Power," and we look for many economies to result from their personal supervision.

Ample depreciation is provided for and charged in cost of operations, and approximately the sum of $35,000 monthly for maintenance and repairs is expended and charged into cost of operations.

The goodwill of the company is today a valuable asset, but is carried on our books at $1. Our standing and prestige in the trade is constantly improving.

Throughout our operations the Budget System is applied and carefully watched, and a steady improvement is constantly taking place in results. There are still many problems ahead of us, but a definite plan has been developed which will effect many additional savings.

The company is fortunate in having in charge of the different branches of its operations men of ability and long experience, who are personally and financially interested in the company, and who have contributed greatly to the company's improved condition.

During the past year some of our three thousand stockholders have contributed to our progress by specifying and using Eagle-A Papers. To them we express appreciation. To those who use competitive papers we suggest that by selecting and using Eagle-A Papers you secure the Right Paper for the Purpose, and incidentally enhance the value of your securities in the company.

We submit the Report on Audit for the year 1927, certified to by F. W. Lafrentz & Co., for your consideration.

Respectfully submitted,
S. L. Willson
President

By Order of
Board of Directors

American Writing

EXHIBIT

BALANCE SHEET AT

(Subject to comments

ASSETS

CURRENT ASSETS:			
CASH:			
In Banks	$1,165,195.27		
In Offices	7,475.00	$1,172,670.27	
NOTES RECEIVABLE		5,975.90	
TRADE ACCEPTANCES RECEIVABLE		9,610.52	
ACCOUNTS RECEIVABLE:			
Customers	1,273,298.42		
Less: Reserve for Bad Debts and Discount	86,664.36	1,186,634.06	
OTHER ACCOUNTS RECEIVABLE	105,278.03		
Less: Reserve for Bad Debts	36,472.47	68,805.56	
INVENTORIES:			
Raw Materials	824,479.22		
Work in Process	68,890.42		
Finished Product	1,554,689.71		
Supplies	265,365.81	2,713,425.16	
TOTAL CURRENT ASSETS			$ 5,157,121.47
FIXED ASSETS:			
Land		950,615.00	
Buildings	6,180,569.59		
Less: Reserve for Depreciation	2,936,665.01	3,243,904.58	
Equipment	8,463,453.26		
Less: Reserve for Depreciation	4,083,116.78	4,380,336.48	
Water Power Rights		1,865,330.00	
Job Orders and Projects in process		67,827.19	
TOTAL FIXED ASSETS			10,508,013.25
Net Amount Realizable through Reorganization Committee and on Sale of Assets, etc.			489,701.21
Investments			2.00
Trademarks, Patents, and Goodwill			1.00
DEFERRED CHARGES			55,529.71
PREPAID EXPENSES			95,031.30
			$16,305,399.94

Paper Company

"A"

DECEMBER 31, 1927

in text of this Report)

LIABILITIES

CURRENT LIABILITIES:

ACCOUNTS PAYABLE, Trade	$466,183.88	
ACCRUED WAGES	42,188.83	
ACCRUED TAXES	2,520.99	
ACCRUED LIABILITY INSURANCE	4,856.11	
ACCRUED SELLING EXPENSE	2,500.00	
UNCLAIMED WAGES	111.69	
TOTAL CURRENT LIABILITIES		$ 518,361.50
Serial Notes	850,000.00	
Less: Serial Notes in Treasury	54,700.00	
	795,300.00	
First Mortgage 6% Gold Bonds	5,500,000.00	6,295,300.00
Reserve for Federal Income Taxes		23,384.17

CAPITALIZATION:

PREFERRED STOCK		9,000,000.00	
NO-PAR-VALUE STOCK:			
Balance at Incorporation	$318,522.33		
Net Profit for the year after providing for Federal Income Tax, etc.	149 831.94	468,354.27	9,468,354.27
			$16,305,399.94

EXHIBIT "B"

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1927

Gross Sales	$14,208,129.88	
Less: Returns, Allowances, Discounts. etc.	868,599.84	
NET SALES		$13,339,530.04
Manufacturing Cost of Goods Sold:		
Raw Materials Consumed	6,346,700.66	
Direct Labor	1,604,314.71	
Manufacturing Expenses	3,738,082.97	
	11,689,098.34	
Inventory Adjustments	120,155.64	11,809,253.98
GROSS PROFIT		1,530,276.06
Commercial Cost of Sales:		
Administrative Expense	296,217.28	
Selling Expense	725,083.34	1,021,300.62
OPERATING PROFIT		508,975.44
Other Income		119,511.20
OPERATION PROFIT AND OTHER INCOME		628,486.64
Other Expense		125,270.53
NET PROFIT before charging Interest on Bonds and Federal Income Taxes		503,216.11
Interest on Bonds	330,000.00	
Reserved for Federal Income Tax	23,384.17	353,384.17
NET PROFIT for the Year ended December 31, 1927, after providing for Federal Income Tax and Interest on Bonds.		$ 149,831.94

February 23, 1928

American Writing Paper Company, Incorporated,
Holyoke, Massachusetts.

Gentlemen:

We have audited the accounts of the American Writing Paper Company, Incorporated, from March 1, 1927, to December 31, 1927, inclusive, and have incorporated in this report the result of the two months January and February, 1927, so that a statement of the operations for the calendar year may be presented. The result of the operations for the first two months of 1927 was reflected in the amount set up against the No-Par-Value Stock at March 1, 1927. The following exhibits support our report.

"A" Balance Sheet
"B" Profit and Loss Account

Comments

Cash:

The disbursements for the year were carefully audited and compared with canceled checks and vouchers on file. The receipts, consisting mostly of amounts due from Customers, were checked to the various accounts and in total to the depositories. The balances reported at December 31, 1927, were verified by correspondence with the various banks, while the cash on hand was subjected to actual count and found to agree with the amount called for by the books. The cash in mills and outside offices was verified by reports received from custodians of the amounts charged to each office and mill.

Notes Receivable: $5,975.90

This small amount was paid in January and February, 1928.

Trade Acceptances Receivable:

The acceptances were submitted for our inspection or traced to the cash book as having been collected.

Accounts Receivable:

The amounts due from customers were listed and found to agree with the balance as stated on the General Ledger. These accounts were aged as follows:

Due	Amount
January, 1928	$ 929,449.42
Future	150,593.66
1–30 days overdue	92,963.17
30–60 days	10,019.52
60–90 days	3,689.08
Over 90 days	26,367.39
Foreign	60,216.18
	$1,273,298.42

There has been reserved for Bad Debts and Cash Discounts an amount approximately 7% of the above total. This seems ample for present requirements. A Reserve sufficient not only for present requirements but for possibilities is suggested.

Other Accounts Receivable:

After setting up a Reserve to take care of all possible losses, the net amount is stated as $68,805.56 and is considered good. Of this balance, over $50,000 was paid on January 6, 1928.

Inventories:

The inventories, stated at a value of $2,713,425.16, are the result of physical inventories taken as at December 31, 1927.

The inventories were checked as to extensions and additions. Prices of Raw Materials were compared with invoices and the prices of Supplies were tested by comparison with invoices wherever possible.

The Finished Product was priced at "Cost or Market, whichever is lower." The market value was established as 80% of the selling price, and this price was used on all product where the cost was in excess of 80% of selling price. This method brought the loss in inventory into the year 1927 where it rightfully belonged. At the same time, the reduction in value on these items was sufficient to provide for the cost of administration, selling, etc., and leave a fair margin of profit when sold.

The physical inventory of Repair Shop supplies was taken and values stated as:

Supplies at Mill	$23,650.24
Supplies at Repair Shop	32,213.02
Total	$55,863.26
The book value was stated as	26,091.20
Difference	$29,772.06

The book value was used for conservative purposes, the supplies at the mills having been charged off as Expense against Operation.

FIXED ASSETS:

The total net Fixed Assets have decreased since March 1, 1927, $35,001.63, as follows:

Depreciation of Buildings and Equipment		$214,965.58
Less:		
Expenditures on Buildings	$22,038.18	
Expenditures on Equipment	101,226.08	
Projects in Process (Increase)	56,699.69	179,963.95
Net Decrease		$ 35,001.63

During this same period, values of the Fixed Assets and Reserve have been changed to conform relatively to the values established by appraisal without increasing the net total as at March 1, 1927. This necessitated a decrease of $1,169,066.07 in value of Equipment and an increase of the same amount in Buildings. The Reserves were corrected in the same relative manner with a reduction of $595,832.32 in the Reserve for Equipment and a corresponding increase of the same amount in the Reserve for Buildings.

REORGANIZATION COMMITTEE:

This asset has been reduced from $900,000, the original value, to $489,701.21 by the sale of property and cash received from the Reorganization Committee.

CURRENT LIABILITIES:

The total Current Liabilities including Trade Creditors and various accruals total $518,361.50 as against $732,758.11 at March 1, 1927. This amount is approximately 10% of the Current Assets, reflecting an enviable position when the Liquid Assets are considered.

SERIAL NOTES:

The original issue of $1,000,000 was reduced under terms of issue $150,000 by the payment of this amount, and, further, the company has purchased $54,700 of these notes which are held in the Treasury and were exhibited to us when called for. The interest on the entire amount outstanding has been paid.

FIRST MORTGAGE GOLD BONDS:

The entire issue is outstanding and the interest has been paid when due.

Reserve for Income Tax:

The amount set up, viz: $23,384.17, is sufficient to meet all Federal Income Taxes payable in 1928.

Profit and Loss:

On Exhibit "B" we show the result for the calendar year 1927, with a net profit for the ten months before providing for depreciation, etc., as follows:

Earnings		$898,369.34
Loss, January and February, 1927	$ 77,056.16	
Depreciation	214,965.58	
Idle Property Carrying Charges	63,959.82	
Federal Income Tax	23,384.17	
Serial Note Interest	39,171.67	
Bond Interest	330,000.00	748,537.40
Added to Surplus		$149,831.94

Result for Year:

The result for the year clearly shows the remarkably quick recovery from the Receivership. The earnings are not so high as might be desirable, but with the elimination of certain non-recurrent expenses charged against the earnings of 1927 and with a slight increase in volume of business, the prospects for 1928 are favorable. A close watch is necessary to keep manufacturing costs down to a figure at least not in excess of 80% of the selling price. We believe this is receiving attention in a very able manner so that results of activity along this line will be apparent at the next annual inventory period. Production should be under a continual supervision in order to reduce costs, but herein is only part of the program. The merchandising of the finished product is absolutely necessary and the development of scientific and sound methods of distribution should be carefully considered.

We Hereby Certify that we have audited the accounts and records of the American Writing Paper Company, Incorporated, and that the statements embodied in this report correctly reflect the operations for the year and the financial condition at December 31, 1927.

Respectfully submitted,

(*Signed*) F. W. Lafrentz & Co.

CHAPTER XII

THE FOLLOW-UP OF THE COMPLETED TRANSACTION

Importance of the Follow-Up Analysis.—It is necessary, in fact essential, that accurate records be kept, covering the performance of an industrial company after a large interest has been acquired in it. In more stable enterprises, such as railroads and public utilities, this follow-up is not quite as necessary. However, the performance of industrials must be watched closely, as they are often subject to considerable fluctuation.

The investment banker is interested in following closely the affairs of any company whose securities he has helped distribute. The investor is interested in the company primarily as an owner of its securities.

The business executive follows the operations as part of his routine work. Obviously, the large investor is as interested as the investment banker in keeping himself informed in order adequately to protect his investment in the company. The professional investigator should be interested from a standpoint of seeing how closely the company's performance adheres to the conclusions of his report. The small investor is as a rule not in a position to execute an adequate follow-up of his investment.

The basis of the follow-up system is the same as the basis of any analysis, namely, the balance sheet and the profit and loss statements. In addition, it is desirable to have contact with one or more executives of the industrial company so that questions arising from the statement analysis can be adequately answered.

Comparative Balance Sheet Analysis.—A comparative balance sheet analysis is made very similar to the check made in

the preliminary analysis. The statements are set up in liquidity form, and arranged so that the trend performance can be determined. The time at which an interest is acquired in a particular company should be used as the base. This time may be a period of abnormal prosperity or unusual depression. The purpose of the follow-up is to determine the performance of the company since the time the interest was acquired or financing undertaken.

The comparative balance sheet analysis should be made at least at quarterly intervals. If it is possible, or during a particularly serious period, it might be desirable to make the analysis monthly. In many cases the company is sufficiently substantial to require only annual or semi-annual analysis. The period used depends largely on the particular company, its financial condition, and the general economic conditions in the industry.

The analysis of the balance sheet should be made to determine whether or not there is a tendency on the part of the company to develop any of the following industrial ailments:

1. Over-investment in receivables
2. Over-investment in inventories
3. Inadequate depreciation and other reserves
4. Over-investment in fixed assets
5. Insufficient working capital
6. Top-heavy financial structure

Comparative Profit and Loss Statement Analysis.—The profit and loss statement should be set up on a basis identical with that used for a preliminary analysis. It is desirable to make the profit and loss analysis at least quarterly; monthly, if the figures are available. On this basis it is quite easy to enter a statement on the analysis sheet as it is received.

The profit and loss statement should be examined for the following weaknesses:

1. Inadequate gross sales
2. Excessive sales returns and allowances
3. Excessive operating expenses

4. Excessive selling and administrative expenses
5. Excessive interest charges
6. Inadequate depreciation and depletion
7. Insufficient profit
8. Excessive dividends and withdrawals of profits

As the analysis of the profit and loss statement and the balance sheets progresses, certain tendencies will usually be revealed. It is at this point that close contact with the company is very desirable. For instance, if the analysis reveals that the company is developing a tendency toward over-investment in receivables, it is desirable to know the company's explanation of this matter to ascertain just what steps are being taken to prevent the condition from becoming more acute. The investor is theoretically in a position where he can demand such information. However, demands of this kind are very easily, yet politely, ignored by companies that prefer not to make certain disclosures. The investment and commercial banker or large investor is usually in the habit of enlisting the cooperation of the company's executives and so obtains adequate explanation for all questions that arise in connection with this follow-up analysis.

Follow-Up Analysis Illustrated—Acme Steel Company

For the purpose of illustration, the Acme Steel Company is analyzed in the form of a follow-up case. This company put out an issue of bonds in 1923. In the following pages there are included a comparative balance sheet analysis (Figure 34) and a comparative profit and loss statement analysis (Figure 35). In both cases the horizontal trend method is used. It is desirable that the profit and loss statement analysis be made at least quarterly, but for illustrative purposes we have condensed the statement into a comparison by years. The effect is exactly the same, except that the long-time interval prevents the analysis from being up-to-date at different times of the year. Let us assume for the purposes of the Follow-Up Analysis that we are in the

employ of Field, Glore and Company, who sold these bonds in 1923. Our analysis would then start with that year as a base. The buying department has purchased these securities as the result of a Complete Analysis, such as has been described in earlier pages of this book. We are no longer concerned with the examination from a buying standpoint, but we are interested in following the affairs of the company, in an attempt to avoid the development of any industrial ailments. In addition we must know the detail of the company's operations so that we may accurately and intelligibly answer questions that originate among the people who have purchased the new bonds.

The statement analysis starts with the year 1923 as the base. Assume we have followed the company until the early part of 1928, at which time the 1927 statements are procurable. The statement analysis reveals the following:

From the statements in Figures 34 and 35 it can be seen that the cash account has increased 214%, which would seem to be a very desirable development. The net sales in the same period have increased 53%, so that the cash should be adequate. The bills and accounts receivable have increased a little faster than the volume of business, but not enough to warrant criticizing the company's credit policy. The inventories have been kept well in hand.

In the fixed asset account we notice that a 46% increase occurred in 1925. This was further increased in 1926 and again increased in 1927. The fixed asset account is increasing more rapidly than the growth in business. It would be necessary to ascertain from the company's executives just why this account has been expanded so rapidly. There seems to be a tendency toward over-investment in fixed assets. The company's explanation would probably be that it has expanded production capacity, not only to take care of the increasing business, but to provide facilities for the next few years in view of the distinct upward trend of sales. It must be realized that plant capacity cannot be increased so as to correlate exactly with sales. It would seem that

Acme Steel Company

Comparative Balance Sheet—For Years Ending December 31, 1923 to 1927

	Dec. 31, 1923	Base %	Dec. 31, 1924	% of 1923	Dec. 31, 1925	% of 1923	Dec. 31, 1926	% of 1923	Dec. 31, 1927	% of 1923
CURRENT ASSETS										
Cash	$ 279,551	100	$ 586,941	210	$ 209,003	75	$ 126,374	45	$ 872,527	314
Bills Receivable							24,193	—	19,584	—
Accounts Receivable	522,193	100	618,130	118	826,150	158	784,913	150	865,489	166
Inventories	1,150,675	100	1,359,288	118	1,991,590	173	1,913,171	166	1,543,994	134
Total Current Assets	1,952,419	100	2,564,359	131	3,026,743	155	2,848,651	146	3,301,594	169
FIXED ASSETS										
Land, Buildings and Equipment	—	—	—	—	6,358,140	—	7,610,086	—	—	—
Less Reserve for Depreciation	—	—	—	—	1,339,867	—	1,530,695	—	—	—
Land, Buildings & Equipment (Net)	3,478,330	100	3,660,061	105	5,018,273	144	6,079,391	175	6,256,173	180
Investments	1,500	100	83,000	5,500	55,500	3,700	25,500	1,700	53,522	3,560
Total Fixed Assets	3,479,830	100	3,743,061	107	5,073,773	146	6,104,891	175	6,309,695	181
INTANGIBLE ASSETS										
Patents	—		—		539,120	—	567,451	—	—	—
Less Amortization	—		—		483,090	—	515,295	—	—	—
Patents (Net)	141,635	100	76,979	54	56,030	40	52,156	38	92,377	65
Deferred Charges	88,080	100	85,003	97	4,179	5	4,139	5	1,647	2
Total Intangible Assets	229,715	100	161,982	70	60,209	26	56,295	24	94,024	41
Total All Assets	5,661,964	100	6,469,402	114	8,160,725	144	9,009,837	161	9,705,313	171
CURRENT LIABILITIES										
Bills Payable	—	—	—	—	—	—	300,000	—	—	—
Accounts Payable	21,746	100	191,196	880	393,059	1,770	185,238	850	225,402	1,030
Accrued Interest	30,000	100	29,335	98	28,800	96	28,200	94	27,311	91
Dividends Payable	—	—	—	—	85,436	—	—	—	—	—
Reserves for Taxes	131,131	100	154,160	117	313,506	239	285,628	217	322,052	244
Total Current Liabilities	182,877	100	374,691	202	820,801	450	799,066	440	574,765	425
FIXED LIABILITIES										
Funded Debt	1,500,000	100	1,470,000	98	1,440,000	96	1,410,000	94	1,381,000	92
CAPITAL STOCK	639,425	100	710,525	111	4,332,150	679	4,573,950	716	4,573,950	716
PROFIT & LOSS SURPLUS	3,339,662	100	3,914,186	117	1,567,774	47	2,226,821	65	3,175,598	95
Total Liabilities and Capital	5,661,964	100	6,469,402	114	8,160,725	144	9,009,837	161	9,705,313	171

Figure 34. Comparative Balance Sheet Analysis Prepared for Follow-Up Study

Acme Steel Company

COMPARATIVE PROFIT AND LOSS STATEMENT—FOR YEARS ENDING DECEMBER 31, 1923 TO 1927

	Dec. 31, 1923	Base %	Dec. 31, 1924	% of 1923	Dec. 31, 1925	% of 1923	Dec. 31, 1926	% of 1923	Dec. 31, 1927	% of 1923
	$		$		$		$		$	
Net Sales	6,682,919	100	7,007,870	105	9,023,230	134	9,196,974	137	10,244,332	153
Cost of Sales	5,581,542	100	5,705,731	102	7,051,387	126	7,504,810	134	8,744,890	156
Depreciation	96,524	100	158,643	165	165,216	171	244,324	254	Not Reported	—
TOTAL OPERATING EXPENSES	5,678,066	100	5,864,374	103	7,216,603	128	7,749,134	136	8,744,890	154
Net Operating Profit	1,004,853	100	1,113,496	111	1,806,627	180	1,447,840	115	1,499,442	150
Less Interest	71,900	100	92,487	128	100,147	139	84,599	118	84,623	118
Net Income	932,953	100	1,051,009	114	1,706,480	183	1,363,241	146	1,404,819	150
Less Federal Taxes	114,491	100	127,799	—	217,723	—	184,038	—	—[a]	—
NET AVAILABLE TO COMMON STOCK	818,462	100	923,210	113	1,488,757	180	1,179,203	144	1,404,819	172
Operating Ratio	85%		84%		80%		84%		85%	
Interest Times Earned	13.9		12.4		18.		17.1		17.7	
Earned per Share Common	$16		$16.26		$ 8.59		$ 6.45		$ 7.65	

[a] Federal Taxes Included in Cost of Sales—Standard Statistics Reports $1,499,442 Available for Bond Interest after Depreciation and Taxes.

Figure 35. Comparative Profit and Loss Statements Prepared for Follow-Up Study

the company might now stop expanding its plants until its sales reach approximately $15,000,000 a year. The item of investments, while small, has increased considerably. Inasmuch as these are carried in the fixed account, we assume that they are not readily marketable, but more or less permanent investments in subsidiary companies.

The company's patent account is apparently being reduced, on the one hand, due to writing off existing patents, and being increased, on the other hand, through the addition of new patents as the business progresses. The company cannot be criticized for this particular practice.

From the standpoint of total assets, the size of the company has increased 71% in 5 years. This is an average annual increase of about 14%.

The increase in current liabilities is rather large. It would seem desirable to determine from the company the exact reasons for this. It is appreciated that the company could not very well be criticized because it has current assets of $3,300,000, against current liabilities of only $575,000. In addition to this, it has sufficient cash to pay off all its liabilities.

The fixed liabilities are being reduced gradually in keeping with the requirements of the indenture under which the company's bonds were issued. The capital stock and the earned surplus show that the equity is improving. From the balance sheet analysis, made for purposes of a follow-up, there is very little to criticize.

The net sales showed an increase of 53%. The cost of sales increased 56% but this is explained partly by the fact that the 1927 figures included depreciation and also by the fact that the volume of business measured in tons probably increased more than the value of the sales in dollars. The reason for this, of course, has been the gradually declining trend of commodity prices since 1923. The operating ratio has been practically constant except for 1925 when it was improved considerably. The net profit showed an increase of 50%, which is a little small in

Follow-Up Report of Acme Steel Company

April 6, 1928.

To: All Executives.

From: Statistical Department.

Subject: Follow-Up Report—Acme Steel Company.

1. Scope. This report is limited to the statement analysis for a five-year period, by years, ending December 31, 1927.

2. Current Assets. Inventories have increased 34% and receivables 66% over 1923. However, cash has increased 214% in the one period while business has grown 53%.

3. Plant Values. Plant has increased 80% with an increase of only 53% in business.

4. Patents. While still amounting to $92,377, this account has been reduced 35% in five years.

5. Total Assets. This item is growing faster than the business due primarily to plant expansion.

6. Current Liabilities. This account seems to be increasing too rapidly. It is not by any means alarming, as the current ratio is now 5.7 to 1.

7. Fixed Liabilities. This account is being reduced in accordance with the indenture requirements of the bonds.

8. Business. Gross business increasing and operating expenses are being kept under control.

9. Depreciation. Now amounts to about 4% of total net fixed assets account, which is adequate.

Résumé. The margin of earnings over the interest requirements is being adequately maintained, hence we are checking this issue but once a year.

view of the 53% increase in net sales, but this difference does not warrant a more detailed examination of operating expenses. The interest charges have been kept well in hand.

As bankers, we are interested in the fixed asset position and the margin of earnings over interest requirements. With the increase in the fixed asset account, the asset position of the bonds is gradually being strengthened. The total interest charges were earned less than 14 times in 1923 but in 1927 they were earned almost 18 times. From both the asset and the earnings standpoint, these bonds are showing substantial improvement. The bankers and the bond dealers and holders can feel well satisfied with their Acme Steel securities.

A Typical Follow-Up Report.—In connection with the work of following a case, it is often advisable to dictate a brief report both for a matter of record and for distribution to those who are interested. A follow-up report should be limited to one page. Like any other report, the scope should be defined, then the salient features should be discussed, and these should be followed with the recommendations of the analyst.

On the preceding page is given such a report covering the operations of the Acme Steel Company.

A Rating System for Follow-Up Analysis.—The capitalist, the investment banker, the commercial banker, and the professional investigator naturally have many enterprises to cover in connection with their follow-up activities. It is not always easy or practical to examine the individual work sheets of analysis to determine the position of a given company. In such cases a summary sheet is used on which the company's ailments are indicated for each particular financial period. Such a form is shown in Figure 36. These tables can be kept on each particular company and assembled in a looseleaf book. Obviously, at a glance, one can determine the present condition of the company.

FOLLOW-UP FORM

Acme Steel Company

	For Year Ending December 31	1924	1925	1926	1927	1928	1929	1930	1931	1932
1	Economically unsound									
2	Over-investment in receivables		✓	✓	✓					
3	Over-investment in inventories		✓	✓						
4	Adequate depreciation and other reserves									
5	Over-investment in fixed assets		✓	✓	✓					
6	Insufficient working capital									
7	Top-heavy financial structure									
8	Inadequate gross sales									
9	Excessive sales returns and allowances									
10	Excessive operating expenses									
11	Excessive selling and administrative expenses									
12	Excessive interest charges									
13	Inadequate depreciation and depletion									
14	Insufficient profit									
15	Excessive dividends									
16	Other ailments									
	Percentage of ailments (each item—arbitrary 6%)	0	18	18	12					
	Percentage of strength	100	82	82	88					

The sixteen items constitute the most common industrial ailments. Obviously item 1 (economically unsound) outweighs all the other factors. However, simply for comparative purposes, we have arbitrarily assigned a value of 6% to each item. Thus in 1927, the Acme Steel Company shows a 6% improvement due to the correction of a condition of over-expanded inventory.

Figure 36. Summary Sheet Used for Indicating Unfavorable Developments in the Follow-Up System

MASTER SHEET

	COMPANY	For Each Quarter																			
		1925				1926				1927				1928				1929			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Acme Steel Co.....	—	—	—	82%	—	—	—	82%	—	—	—	88%								
2	Best & Co.....																				
3	Corn Products Ref. Co.																				
4	Rockwall Co.....																				
5	Belding-Heminway Co.																				
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Figure 37. Rating Schedule for Follow-Up of All Companies

In order to further facilitate a rapid inspection, each one of the items in the table can be given a numerical value, so that a company might be said to be 40% ailing or 60% sound. It must be remembered that these ratings are entirely arbitrary and created only for purposes of hasty comparison. In such cases, where a large number of companies are under consideration, it is desirable to make a master sheet, listing these percentages. Such a master sheet is shown in Figure 37.

CHAPTER XIII

THE SPECIAL STUDY

Indications for a Special Study.—Whenever the follow-up study reveals a serious development of any of the industrial ailments that have been previously outlined, it is necessary to undertake the special study. The special study is substantially the same as a Complete Industrial Analysis with particular emphasis on the ailments revealed in the Follow-Up Analysis. Thus if the company under consideration is showing a distinct tendency toward over-investment in fixed assets, it would be necessary in making the Complete Analysis to determine the reasons for this increase and then to decide upon the best method of correcting the fault.

The investment banker is usually in a strategic position to make a special study. The same personnel that works out for the banker the details of the origination of new business can be used in making special studies. Frequently the banker's staff is supplemented by independent engineers and accountants. The large investor, if his holdings are large enough, can usually approach the president of a company and make arrangements for a special study. However, it must be remembered that such a study is generally made at the expense of the security holder. Some of the larger philanthropic institutions like the Rockefeller Foundation, and some of the larger investment trusts like the American Founders Corporation, maintain analytical staffs capable of making such special studies. The small investor and the speculator must confine their special studies, for the most part, to a statement analysis.

An interesting example of a case in which the services of a professional consulting engineering firm were engaged will be found in the following extract from the annual report for 1925

of Belding Brothers and Company, silk manufacturers and the predecessor to the Belding-Heminway Company:

"Sanderson & Porter were engaged to make a careful study of the operations of the Company. Their recommendations in respect to the Sales Department have already been adopted; by this it is expected to improve the sales records and increase the turnover. Still further study is required for the Manufacturing Department, particularly in relation to power plants, and power equipment, and the consolidation of production. Improvements will doubtless be made during the coming year which will reduce manufacturing costs. No new construction will be required for the present, as our manufacturing facilities are adequate."

Permission to Make the Special Study.—As has been explained, the special study is made after the follow-up analysis indicates that the company is developing an unhealthy condition. It is made in an attempt to remedy this condition before the company has reached a state of financial embarrassment or bankruptcy. Since a study of this kind is practically a Complete Analysis, it necessarily involves a plant study, a field study, a study of the organization and management, and in addition, means the analysis of special details of the company's business of a more or less confidential nature. As a rule the company's management is awakened to the fact that the business is gradually becoming involved. In short, it is no news to the company's executives. However, if the executives are approached on the basis of the study being made to assist rather than to criticize them, permission may be granted. In a special study of this kind, the company would receive the advantage of an independent and "fresh" analytical point of view, and frequently independent consulting firms are called upon. It might mean the injection of two or three ideas that would materially assist the company's executives in the solution of their problems. Technically, the security holder could demand the right to make such a study, but this is by far the worst way to approach the problem. The suc-

cessful study calls for the complete cooperation of all the company's executives, and this cannot be had through any method of intimidation.

The Cost of Such a Study.—The cost of such a study is usually met by the banker or by the institution making the analysis. Occasionally the company can be prevailed upon to carry a part or all of the costs, in view of the fact that the company will enjoy the most benefit from the particular study. Of course, if the company pays for it, it is in fact paid for by the common stockholders.

Consulting engineers and accountants command about $100 a day plus expenses for their services. Junior engineers and accountants, as a rule, command up to $50 per day with expenses, and the clerical assistants cost about the same as they do in any other line. Inasmuch as such studies frequently involve considerable traveling in order to make the plant, field, and organization studies, the expenses may amount to a considerable sum. It would be safe to say that a special study could not be made ordinarily for less than $5,000. The maximum limit would depend upon the size of the organization being analyzed and the completeness of the study. It is not unusual to see studies that involve the expenditure of over one-quarter of a million dollars. These sums may seem extremely large, but they are rather insignificant if one considers that the expenditure of $250,000 will successfully rehabilitate a company having over $50,000,000 of assets.

In many cases a limited special study can be made without going into the details of the field work. Such studies can be made when there are ailments present that particularly involve the whole industry and its changing business conditions, rather than the operations of a particular company. The cost of such a study is necessarily quite small.

Reasons for the Special Study.—The special study is primarily made to correct the particular industrial ailment that

has developed. As a rule it means devising methods to rehabilitate the earnings of a company or to force a liquidation before the assets are completely dissipated. In the case of the small investor and speculator, it simply becomes a question of, "Shall I hold the security or dispose of it?"

It is quite remarkable with what accuracy the general trend of a company's operations and earnings can be predicted. A special study will show just what is happening within the industry, to the particular business, and to the trend of its sales, and also the factors that can be corrected through the injection of new money, new methods, or new personnel. It will also reveal such economic conditions as are quite beyond the company's control.

The procedure in making a special study is about the same as used in the Complete Analysis except that in the special study the cooperation of the board of directors as well as the management should be enlisted so that any recommendations that are made will receive sympathetic attention.

Conclusions of the Special Study.—The scope and conclusions of the Special Study are well illustrated by the following outline and summary of a report on the Central Leather Company, which illustrates how the industrial engineering firm of Sanderson & Porter [1] attacked this particular problem. The actual report was so voluminous (two volumes totaling approximately 600 pages) that a condensed report was written to cover the salient features. Following is the table of contents and list of exhibits in this report:

TABLE OF CONTENTS

Introduction
Corporate History
Corporate Structure Including Affiliated Companies
Products

[1] This report on the Central Leather Company, made in the spring of 1924 for the management and financial interests in control, has been obtained through the courtesy of Mr. Henry Cochran and Mr. B. A. Tompkins of the Bankers Trust Company, the latter a director in the U. S. Leather Company, the successor to Central Leather Co. Mr. H. S. Brown, former president of the U. S. Leather Company and formerly of Sanderson & Porter, made the following analysis and the authors wish to express their appreciation of his interest and cooperation in making his personal copy available to them.

Survey of Heavy Leather Industry
Position of the Company in the Industry
Plants and Their Physical Property
Investments
Working Capital
The Company's Asset Position
Business and Financial Policies
Organization and Personnel
Earning Power
Recommendations
Financial Data and Exhibits

List of Exhibits

Consolidated Balance Sheet, December 31, 1923
Comparative Profit and Loss by Periods for the Years 1910 to 1923, inclusive
Comparative Statement of Resources and Their Application, December 31, 1909 to December 31, 1923
Comparative Statement of Working Capital, December 31, 1909, 1915, 1919, 1923
Statement of Surplus by Periods for the Years 1910 to 1923, inclusive

The conclusions of the special study made by Sanderson & Porter for the Central Leather Company were as follows:

Our recommendations as a result of our study may be summarized as follows:

I. There should be no delay in taking such steps as may be determined upon to preserve the Company's strong asset position and put it in a strong earning position.

II. Committee control should be abolished and the chief executive should be an experienced business man whose outstanding characteristics are the peculiar ability, vision and perspective of the merchant. Experience in the leather industry, while not absolutely necessary, perhaps would be preferable.

III. The Company does not require two general executives and the office of Chairman should be allowed to lapse with the retirement of its present incumbent.

IV. There should be an executive committee of the Board of Directors, with power to act, so that the President can have the advice of the Board on short notice when needed in the exigencies of the Company's

affairs; but this should be a committee of the Board, not a committee of the management.

V. Immediate retrenchment should be effected in overhead expenses; this step has for some time been contemplated by the management.

VI. The Company should introduce the budget system of financial control, to be based on sales and manufacturing program, based in turn upon expectation of sales and current levels of prices and costs, as worked out and revised from time to time by modern methods of market analysis, to keep it in accord with changing conditions or prices. These programs should be used for establishing sales quotas, for a study of the trends of conditions in the Company's markets as a guide for hide purchases and for inventory control.

VII. Special attention should be devoted to the development of policies tending to increase the rate of turnover of working capital. A policy of liquidating surplus inventories should be promptly determined and thereafter energetically carried out.

VIII. For the information and guidance of the executives the Company's statistical organization, required for the preparation and maintenance of programs, should constantly study and report upon world and domestic conditions affecting the industry.

IX. The Company should make its hide purchases by the use of brokers, and by resorting to the many devices commonly used by large buyers. In this connection attention is directed to our suggestion for stabilizing hide prices.

X. A method of accounting should be developed that will show the value of inventories on the basis of cost market of raw materials, whichever is lower, and that will at the same time meet the Company's needs with respect to federal and state income tax laws.

XI. Timber lands should be conducted primarily as lumber operations and liquidated as rapidly as practical.

XII. The book value of the T. V. R. R. should be amortized over the remainder of the period of its usefulness to the Company.

XIII. Steps should be taken at once with a view to the sale of the S—— and N. Y. R. R.

XIV. The investment in G. P. Tanning Company should be retained for the present even though the funds are now needed by Central Leather Company because it would be impossible to realize the face value of the investment now or in the near future and we believe that the G. P. Tanning Company has value to the Central Leather Company, not only because of its present worth and its earning power, but also because it

spreads the risk, being in a different division of the industry and operated by a different group of men.

XV. Steps should be taken at once to rehabilitate H—— and M——, Inc., financially, to provide it with capable and aggressive management and then to develop its full usefulness to the Company as a sales outlet as well as to recover advances made to it.

XVI. The Company should take the lead in the industry toward the standardization and reduction in number of kinds and grades of sole leather and in bringing about uniform terms of sale contracts and practices pertaining thereto.

XVII. An immediate and constant effort should be made with the other units in the industry (principally of course, the larger) to cooperate for the purpose of stabilizing the industry and eliminating the present adverse influences relating particularly to disposition of surplus stocks, curtailment of production, purchases of hides, sales of leather and standardization of merchandising methods.

In conclusion, we wish to express our sincere appreciation of the assistance and unfailing courtesy extended to us by the officers and employees of the Company and its subsidiaries.

Special Study Illustrated—Moon Motor Car Company

For purposes of illustration, the Moon Motor Car Company has been chosen as the subject of a Special Study. This will not involve much field work because the situation surrounding this company's business involves more the changing economic conditions of the industry than anything else. It further illustrates how completely an analysis can be made on certain companies by referring only to the published information. This case, for example, has been based on careful study of information available in the listing circulars compiled by the New York Stock Exchange.

History of Business.—The Moon Motor Car Company was incorporated under the laws of Delaware on July 5, 1917, with a perpetual charter. It succeeded to and took over the business of the Moon Motor Car Company, a Missouri corporation engaged in a similar business, which was organized on October 2,

1907. This latter company was in reality an outgrowth of the Joseph W. Moon Buggy Company, founded in 1894.

Under its charter the present company is authorized to manufacture, buy, sell, and deal in engines, automobiles, motors, motor parts, motor vehicles, trucks, tractors, etc. In pursuance thereof, it manufactures the Moon car, selling the product in all states of the United States and in the principal foreign countries. A large, well-established dealer organization exists.

The company has obtained practically no capital from outside sources since the original incorporation in 1907. Its present worth has been built up entirely from accumulated earnings.

The Moon Motor Car Company has a plant in the city of St. Louis, located on the line of the Wabash Railroad. The company does not manufacture its own engines, axles, transmissions, or other principal units. These are purchased from specialty manufacturers on contracts, though in some cases the units are made exclusively for the Moon Motor Car Company. The company does not make its own automobile bodies, but purchases them under contract to conform with the original Moon design and specifications. In this way the company manages to keep its plant and inventory investment considerably below what it would require on a completely integrated manufacturing basis.

The company's record of cars produced and sold is as follows:

Years	Number of Cars
1917	1,246
1918	939
1919	1,819
1920	2,466
1921	1,956
1922	3,343
1923	8,691
1924	9,049
1925	10,271
1926	8,023
1927 (Seven months)	2,427

We have included the earnings statement of the company from the beginning of 1922 to August 31, 1927. We have also

included comparative balance sheets for the years ending December 31, 1925, December 31, 1926, and the period ending August 31, 1927.

The Analytical Steps.—It will be recalled that the Complete Analysis calls for ten separate steps. The plant and the organization study is omitted so as to make possible an analysis in the shortest possible time and at a minimum of expense. The descriptive material on the plant shows that the company owns almost 250,000 square feet of floor space, together with a lease for 93,000 additional square feet. The total fixed assets, including real estate, buildings, machinery, patterns, etc., amount to only $610,127 on the balance sheet. It can be concluded that the assets are conservatively valued. However, one must remember that the company only assembles motor cars. This is one of the simplest operations in the entire motor car manufacturing process. Even if the plant were improperly laid out, it is doubtful whether it would mean an appreciable reduction in the cost of the finished product to have the plant rearranged. For these reasons the omission of the plant study does not introduce any serious weakness in the effectiveness of the study. The same may be said of the omission of the organization study. The introduction of new personnel here and there would not solve necessarily the company's real problems. With these three omissions in mind there are enumerated below the different items to be covered by this special study:

1. The Industry
2. The Business
3. .....
4. Sales
5. .....
6. Product
7. Comparative Balance Sheets
8. Comparative Profit and Loss Statements
9. .....
10. Conclusion

Note that item 3, Plant, item 5, Organization, and item 9, Vertical Check have been omitted as outlined above.

The Industry.—The motor car industry is, according to the latest figures, the country's biggest single industrial activity.

Henry Ford blazed the trail when he successfully placed the automobile business on a quantity production basis. He is credited with having given the world a cheap car, but actually he did considerably more than that. He introduced to the world mass production methods. In keeping with this tendency it was necessary to create mass selling, which is also now an accomplished fact. It is almost unnecessary to compare the Moon Motor Car Company with the industry in general. The industry has been growing at a tremendous rate, but the Moon Motor Car Company has seen its business fall off during the same interval. There is a definite tendency toward large producing units, resulting in a reduction in the number of independent motor car companies. This is emphasized by the recent acquisition by Chrysler of Dodge Brothers, Inc. and by Studebaker of Pierce-Arrow.

Another tendency that is distinctly defined is that of standardized production on a large scale. It should be borne in mind that the Cadillac Motor Car Company makes a series of cars available in many color combinations. This is still standardized production as far as the entire machine goes except that a little diversification is introduced in the paint shop. This is not expensive as a manufacturing operation. Another tendency is that of the buying public to patronize the larger producers because of the ease with which they can have their cars serviced. In these days of good roads and fast travel, it is as essential to have service available in Ames, Iowa, as well as in Chicago. It is apparent that the competing position of the small independent manufacturer is becoming increasingly difficult.

Figure 38 will emphasize, in a graphic manner, the decline of the Moon business in contrast with the growth of the industry as a whole.

The Business.—The Moon Motor Car Company must sell its product in competition with the larger manufacturers like Chrysler and General Motors who sell cars in practically every price class. In addition to that it must compete with the sizable

independents like Hupmobile, Marmon, and Packard. These larger companies maintain extensive engineering organizations for the development of new features. They advertise million-dollar proving grounds and so sell the public on the fact that they are striving to be leaders. The appeal is quite impressive, and it is substantiated by the fact that these companies usually pioneer the way in new car trends. An organization the size of the

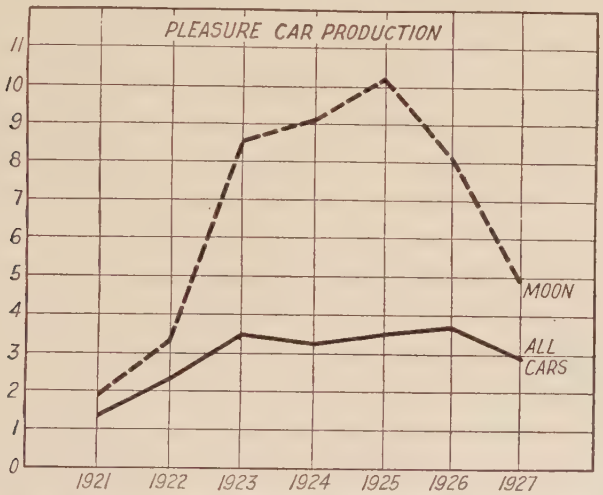

Figure 38. Chart Showing Pleasure Automobile Production for the Years Indicated

The Moon Motor Car figures are in thousands of units, while the industry figures are in millions of units. The Moon 1927 figures are estimated on the basis of seven months' actual production.

Moon Motor Car Company cannot afford such work and is immediately put under a handicap.

From a manufacturing standpoint, a company producing a few thousand units a year would necessarily have a higher unit cost than the producer who makes a thousand units a week. The public associates mass production with cheap production. Consequently, there is a tendency to feel that the larger producer can give more automobile for the same money than the smaller producer. The companies that attempt to make high-grade cars on a custom basis are in a similarly difficult position. The Rolls-

Royce Company makes what is generally accepted as a nearly perfect motor car having individuality. The company's product is excellent but its financial performance is far from that. Since the company was organized for profit, it certainly cannot be complimented on its performance even though the product is excellent. Other companies like Stevens-Duryea, Lozier, Simplex, and Crane have, in the past, attempted to do the same as Rolls-Royce but have met with even less success than the Rolls-Royce Company. If the Moon Motor Car Company is attempting to market its car on such a basis, its outlook is decidedly dismal. If it is attempting to market a popular-priced car (the list price indicates that it is), the fact that it is not on a volume basis again puts it at a distinct disadvantage.

Sales and Product.—The chief ailment of the Moon Motor Car Company, apparent from the figures, is its failure to maintain or increase sales volume. Sales is the one item that is extremely difficult to expand without the introduction of considerable money and effort. We find that the Moon Motor Car Company has had a reputation of producing a substantial assembled car. However, some of its recent models have not met with general public approval. The advertising by the larger companies of their research work and proving grounds has put the small independent producer like the Moon at a disadvantage. The advertising of a "one profit" car by Studebaker, in which the claim is made that they manufacture virtually the entire car, has further weakened the position of the manufacturer of assembled cars.

Another feature is that the large producer so designs his scale of prices that he has a car virtually for every purse and purpose. Chrysler, for instance, scales its prices from the Imperial 80 down to its recently introduced Plymouth. General Motors starts with the custom built Cadillac and ends with the Chevrolet. Studebaker has recently introduced the Erskine so that it may compete in the lower price classes.

Producers in a price class with Moon are usually on a basis of producing a very large number of cars per year and actually manufacture these cars rather than simply assemble them. Producers like Hudson, Essex, and Hupmobile are, therefore, able to provide much wider facilities as regards service in addition to being in a position to take advantage of national advertising.

The Moon Motor Car Company enters the claim that its motors are produced by motor specialists, that its transmissions are built by specialists, and so on with all the major parts of the machine. The unfortunate part of this argument lies in the fact that the large producers are now operating on such a scale as to absorb many of these specialists. Again, it must be remembered that the machinery of an automobile has become so standardized that even the cheaper cars are, today, dependable. The buyer today takes reliable operation for granted and pays more attention to looks and refinements. The large manufacturer, because of his resources, is able to employ extremely high-priced artistic talent to refine the operating devices that his engineers produce. Thus we find that interior decorators of renown are employed in the matter of selecting upholstery, that designers of similar note are employed to refine such details as headlights and hardware.

It would seem that the only stimulus that could be given to Moon Motor Car sales is through the introduction of new models having particular visual appeal in addition to being good machines. It is not clear why the Moon should be able to do this more efficiently than the large manufacturer. Another element that might tend to disturb sales is the gradual reduction in the value of the company's equity, thus making the dealer's position increasingly weak.

Comparative Balance Sheets.—The comparative balance sheets in Figure 39 show that the company's cash position is quite satisfactory, due to the sale of the additional stock. The notes and accounts receivable have dropped slightly but not proportionately in view of the tremendous drop in business. The

Moon Motor Car Company, Inc.

COMPARATIVE BALANCE SHEETS AS AT DECEMBER 31, 1925, DECEMBER 31, 1926 AND AUGUST 31, 1927

ASSETS

	Year ending Dec. 31, 1925	Year ending Dec. 31, 1926	Period ending Aug. 31, 1927
Current:			
Cash in banks and on hand	$ 337,576.98	$ 113,855.50	$ 648,127.08
Notes and accounts receivable	332,742.40	312,312.59	291,730.39
Less reserve for doubtful notes and accounts	20,000.00	36,000.00	36,000.00
	$ 312,742.40	$ 276,312.59	$ 255,730.39
Due from subsidiary sales companies	244,731.30	.....	361,479.97
Less reserve	.....	.....	162,000.00
	$ 244,731.30	.....	$ 199,479.97
Sundry trade and other accounts receivable	14,213.55	$ 5,480.69	12,512.58
Due from employees for traveling and other advances	4,468.18	26,483.98*	.....
Inventories (at cost or market, whichever lower)	1,457,890.73	1,649,133.74	976,579.29
Total current assets	$2,371,623.14	$2,071,266.50	$2,092,429.31
Miscellaneous accounts and notes receivable	27,371.93	24,220.16	20,901.15
* Due from officers and employees	.....	.....	33,730.38
Claims:			
Miscellaneous trade and against insolvent banks, based on unpaid drafts and certificates of deposit			12,118.93
Prepaid expenses:			
Insurance, taxes and advertising	34,869.79	102,487.15	102,803.43
Investments in stocks of other companies (at cost)	21,500.00	8,500.00	29,000.00
Fixed assets:			
Real estate and buildings, machinery, tools, equipment, patterns, designs and drawings	733,522.36	900,328.87	873,210.39
Less reserve for depreciation	196,355.30	266,040.79	263,083.24
	$ 537,167.06	$ 634,288.08	$ 610,127.15
† Goodwill	475,000.00	475,000.00	475,000.00
	$3,467,531.92	$3,315,761.89	$3,376,110.35

LIABILITIES

(Giving effect to sales of stock aggregating 161,000 shares)

Current:			
Notes payable to individuals and banks	.....	$ 451,922.93	.....
Trade acceptances	.....	76,940.61	$ 264,821.36
Accounts payable trade creditors	$ 352,900 64	831,199.85	307,557.40
Customers' deposits	24,391 08	27,201.08	32,474.40
Accrued payrolls and other advances due employees and officers	2,300.01	24,065.33	8,077.32
Customers' credits	.....	.....	56,616 61
Accrued taxes	.....	.....	844.09
Accrued interest	.....	.....	4,010.52
Reserve for income and profit taxes	170,888.76	.....	.....
Total current liabilities	$ 550,480.49	$1,411,329.80	$ 674,401.70
‡ Capital stock—common authorized and outstanding (180,000 shares), without nominal or par value, net equity	2,917,051 43	1,904,432.09	.....
Capital stock—common authorized and outstanding (341,000 shares), without nominal or par value, net equity	.....	.....	2,701,708.65
	$3,467,531.92	$3,315,761.89	$3,376,110 35

* Includes cars and accessories purchased on time payment, secured by Chattel Mortgage.
† Represented by excess of appraised value over book value of fixed assets.
‡ No dividends paid since November 1, 1926.
Balance sheet for 1926 on consolidated basis.

Balance sheet for period ending August 31, 1927 is after giving effect to proceeds from sale of 161,000 shares additional capital stock; i. e., 61,000 shares under previous application (A 7725), dated November 5, 1927, and 100,000 shares under this application. Balance sheet for years ending December 31, 1925 and December 31, 1926, based upon audits and reports by Peat, Marwick, Mitchell & Co., Certified Public Accountants, St. Louis, Mo., and for period ending August 31, 1927 upon audit and report by T. J. Harga don & Co., Certified Public Accountants, St. Louis, Mo.

In addition to the above there are contingent liabilities in respect to the following: Dealers' paper covering purchase on time payments through the parent company, subsidiaries, and certain dealers, discounted or through repurchase agreements, and domestic and export shipments with or without Bankers' guaranties with the shipping documents attached discounted; in respect of both of which there are contra-assets; certificates of deposit in various dealers' banks discounted by the Company at its various depositaries.

Accounts of subsidiary sales companies carried as receivables and not consolidated in the above balance sheet in 1925 and 1927.

Figure 39. Comparative Balance Sheets of Moon Motor Car Company for the Years 1925–1927

amount due from subsidiary sales companies has increased 41% in the face of a large reduction in business. This would seem to indicate that the company is making extremely liberal concessions in the distribution of its cars. However, it will be noted that the company is rather dubious about the value of some of these accounts and has therefore provided a reserve of $162,000 to cover the losses in connection with the liquidation of these items. The failure to reduce the amount of the notes and accounts receivable due from employees is not satisfactory. The reduction in inventory is indicative of good management. The $12,118 of claims is not included in the current assets, which is entirely proper. The increase in prepaid expenses seems to indicate a tendency toward expanded advertising in an effort to sustain and increase the sales.

The fixed assets have increased since 1925, which is hardly in keeping with the company's performance in sales. The company had apparently calculated on an increase in business which did not materialize. The reserves for depreciation are adequate because the company is charging 7.5% on buildings and 10% each on building equipment, machinery, stationary and movable equipment.

The company carries its goodwill at $475,000. The value of goodwill is usually open to dispute. The goodwill has originated through the excess of appraised value over the book value of fixed assets. This question of appraised value has been emphasized earlier in the book. The fact that the fixed assets have been appraised by independent engineers at cost of reproduction, less depreciation, and then given a value, in excess of the book value, does not mean that the plants would bring anything like this price in liquidation. The real value of goodwill is the capitalization of earnings over the normal return. As the Moon Motor Car Company has no such profits, it would be more in keeping with conservative practice to eliminate this goodwill quantity by a corresponding reduction in the declared value of the no-par common shares.

The current liabilities were excessively high at the end of 1926, due undoubtedly to the company's poor cash position at that time, coupled with the expenses connected with the liquidation of Diana Motors and some of their selling subsidiaries. At the time of the analysis, the current assets were 3.1 times the current liabilities, but this was largely the result of the sale of 161,000 shares of common stock rather than the profits from operations. As a result of losses in 1926 and 1927, the equity value of the common stock decreased from $10.50 per share to about $7.92 per share in 1927. Eliminating the goodwill further reduces the value of the equity to about $6.45 per share while its market value was $7.25 per share. The company has corrected its working capital ailments of 1926 through the sale of additional stock but whether or not it is in a position to maintain its balance sheet in the present form depends entirely upon its capacity to earn money.

Comparative Profit and Loss Accounts.—The net sales (Figure 40) show a disastrous decline since 1925. Naturally a reduction in sales will magnify the reduction in profits, or conversely, an increase in sales will magnify the profits, other things being equal. It is only necessary to notice that between 1924 and 1925 the sales increased $3,300,000, or about 36%, while the profits increased over $500,000, or about 95%. The change between 1926 and 1927 involves the same principle except that it is a loss in business rather than an increase. It is, therefore, necessary to again indicate the importance of the company rehabilitating its sales. The elimination in 1927 of almost all the other income is also unsatisfactory. For the first time since 1922 the company shows a loss before taxes and interest charges. There will be no federal taxes on profits, since these profits are absent. Coupled with its unfavorable showing as a result of operations are the large deductions necessary because of the losses due to liquidation of selling subsidiaries and the unprofitable investment in Diana Motors.

Moon Motor Car Company

Comparative Income Statement

Particulars	Year ending December 31					8 months ending
	1922	1923	1924	1925	1926	Aug. 31, 1927
Net sales of passenger cars, parts, accessories after deducting returns and allowances	$6,877,159.27	$9,741,857.41	$9,287,670.99	$12,678,465.49	$8,897,299.95	$2,595,834.02
* Less cost of sales: Material, transportation, productive labor and overhead, manufacturing	5,614,614.25	8,241,643.42	8,020,917.83	10,481,905.05	7,529,707.25	2,280,634.37
Gross profit on sales	$1,262,545.02	$1,500,213.99	$1,266,753.16	$ 2,196,560.44	$1,367,592.70	$315,199.65
Add: Other income:						
Discount on purchases	80,569.59	99,186.96	87,795.80	104,874.99	64,673.30	.....
Interest earned	21,477.73	29,092.84	10,061.79	5,737.55	2,286.47	7,354.83
Dividends received	.....	.....	4,211.15	.....	.....	.....
Miscellaneous revenue	94,613.96	20,446.96	25,225.63	19,632.13	14,312.66	.....
Gross profit and other income	$1,459,206.30	$1,618,940.75	$1,394,047.53	$2,326,805.11	$1,448,865.13	$322,554.48
Deduct selling, administrative, and general expenses	545,041.18	682,201.44	747,031.77	1,053,088.18	1,299,832.95	322,965.45
Profit before deducting federal income taxes and interest charges	$914,165.12	$966,739.31	$647,015.76	$1,273,716.93	$149,032.18	*$410.97*
Deduct: Federal income taxes	118,744.46	124,730.70	87,430.39	170,888.76	.....	.....
Profit before deducting interest charges	$795,420.66	$842,008.61	$559,585.37	$1,102,828.17	$149,032.18	.....
Deduct: Interest paid	281.25	.....	.....	.....	23,610.72	19,591.39
Net profit or loss for period	$795,139.41	$842,008.61	$559,585.37	$1,102,828.17	$125,421.46	*$20,002.36*
Less operation and liquidating losses of subsidiary selling companies	.....	.....	.....	.....	624,060.24	162,000.00
Net loss	.....	.....	.....	.....	*$498,638.78*	*$182,002.36*
* Cost of sales includes depreciation and amortization of tools:						
Depreciation	$10,821.40	$15,847.24	$17,160.97	$15,778.72	$22,534.52	$13,742.32
Amortization	.....	.....	18,223.69	26,918.61	32,327.33	.....
Totals	$10,821.40	$15,847.24	$35,384.66	$42,697.33	$54,861.85	$13,742.32

Figure 40. Comparative Income Statement of Moon Motor Car Company for the Years 1925–1926 and the Eight Months Ending August 31, 1927

Conclusions.—No further comparison of the Moon Motor Car Company with other companies need be made and the findings may be briefly summed up as follows:

1. The motor car industry is the leading industry in value of products. We, therefore, cannot blame the industry itself for the poor showing of the Moon Motor Car Company. Other motor car manufacturers have made money during the same period.

2. The business of the Moon Motor Car Company is declining because the company is operating at a distinct economic disadvantage. Unless the company can place its operations on a large-scale manufacturing basis, its future is not very promising. In order to do this it would seem necessary to consolidate with other independent manufacturers, and possibly also with some of the specialists who fabricate major assembly units in order to give Moon a completely integrated production. On this basis the company could eventually produce a full line of cars, have more adequate servicing, and enjoy larger research and proving facilities.

It would be our conclusion not to buy the stock of the Moon Motor Car Company. We would not recommend the introduction of additional new money unless consolidation plans were formulated, whereby the company could be placed on a reasonably competitive basis with other producers.

CHAPTER XIV

SPECIAL STUDY OF PROMOTIONAL FINANCING

In this chapter industrial financing of the pure promotional type only will be considered. It is true that the consolidation of several independent motor car companies into a large unit like the General Motors is in the nature of a promotion. However, in such a case each one of the independent companies has in some way demonstrated its earning power. Such major consolidations are generally the result of large-scale investment banking operations and cannot be classed as promotion in the usual sense. Pure promotion, however, involves a somewhat different analytical attack.

Pure Promotions and the Public.—In one of a series of articles published in 1926 in the *New York Evening Post* on the subject of pure promotions, the following appeared:

"If one man behind the oil company is honest, the fact remains that in wild-cat ventures all the risks are being taken with the money of the stockholders. Some of the oil promoters have the best intentions in the world, but they are visionaries and dreamers, totally incapable of performing what they set out to do.

"The public imagination seems to be easily fired by tales of mysterious inventions. Inventions appear to rank next to oil schemes as popular means of separating investors from their money. One man invested $2,000 in the stock of a company that was to produce a new metal. All he had to show for his money was a bar of the metal.

"Investing in inventions is a fascinating way of losing money. It is not generally understood that even when inventions are prac-

tical from a marketing viewpoint patents usually are only moderately valuable.

"The United States Patent Office recently held a house-cleaning to get rid of more than 150,000 models of inventions. These did not include successful inventions, but the thousands of impractical and even ridiculous devices into which people have put faith and money. Every year between 75,000 and 90,000 applications for patents are made in the United States. Fewer than half that number are granted.

"Large corporations employ high-salaried engineers to distinguish between practical and worthless inventions, and then they sometimes pick losers. The great army of investors buying from shady concerns put their money up on nothing more than a small model of the device to be sold."

Many pure promotions are in the form of oil promotions or in companies formed to manufacture and sell some new patented article. The principles of analysis are practically the same because the patent is just an incident in the scheme of promotion. A patent may very easily be compared to a public utility franchise. Such legal instruments have value only in proportion to their capacity to earn money. The promotion must, therefore, be judged the same as any other industrial situation, the difference being that the industrial going-concern has a demonstrated value, while the promotion is unproved. This, of course, is a tremendous gap, but it is really the only distinction between the two.

The Financing of Promotions.—Most sound promotions find adequate financial support through private financing. Should a proposition of this kind come to a banking house, it would probably be handled privately by the partners until a point had been reached where its value had been demonstrated. At this point it would be publicly financed. It follows, therefore, that many of the pure promotions that go directly to the public are of such a speculative character that bankers will not handle them privately. The firm of Campbell, Peterson and Company, Inc., of New York

City, make a specialty of promotional financing. The quantity of work in the form of investigation that such a firm must carry out before accepting a proposition would take a volume to describe. In all probability, at least 99% of all the promotions offered to them are rejected. When one considers that this firm was organized primarily to handle just this kind of work, the risk that the independent speculator takes can be fully appreciated.

Every year the exponents of the Blue Sky Laws, the Better Business Bureaus, the Chambers of Commerce, and others, join in voicing their warnings to persons who would risk their savings in a "fly-by-night" promotion. Every year most of these persons show their respect for the warning by wasting about $3,000,000,000 in alleged investments. The total income in the United States for 1925 was about $61,735,000,000. Of this about $7,100,000,000 was invested in legitimate new bond issues. At the same time, in spite of all the precautions taken by the protective bureaus, about half that sum was "sunk" in fraudulent or near-fraudulent promotions. This last figure is undoubtedly low, because of the difficulty in accurately checking all losses. People do not freely admit their losses in such ventures.

Investigation Procedure in Promotions.—The promotion represents a three-stage process—discovery, assembling, and financing.

Discovery means more than discovery of a business possibility. A promoter might discover a reasonable location for a prize fight arena, a logical location for a bus line, or any other business proposition. Discovery, however, in the business sense is not complete until a detailed and thorough investigation of the proposition has been made as to its possibilties and probabilities. Thus discovery for the promoter represents a thorough lining up of his case. It means the assembly of the facts, if any, for presentation. Often, however, it means nothing more than dressing up a fable just enough to pass muster with the Attorney General's office.

Assembly is the second step in the promotional proposition, and is represented by the assembly of men, machine, options, and capital resources as a basis of carrying out the proposed project. Frequently this step is never covered except that portion of the process relating to the assembly of capital, which is in reality the third step of financing. Financing, or the assembly of capital resources, should not be undertaken on the basis of promises, theories, or patents that have merely been applied for and which have not been proved commercially practical.

Finally, after adequate discovery embracing a thorough and comprehensive investigation and careful assembly of options, men, machines, and capital resources, the third and last step of financing represents the stage at which the investor enters. Promotions are financed through a private or public sale. With the money realized, operations are supposed to start, and from these operations profits are supposed to flow.

Of course, not all promotions are irregular. The investor should try to see the case in its true perspective. First, he must be sure to distinguish between investment and promotion. The promoter asks the investor to invest in his company, while actually he wants to gamble with the funds invested. A speculation, even when basically sound and honestly administered, is a risk. The risk is big—and if successful, the profits are large.

By careful analysis, one should be able to detect a speculation that is a downright fraud, or that, for one reason or another is unsound. Fraudulent promotions are not offered publicly nearly as much as in days past, thanks to the Post Office, the better business bureaus, and the stock and bond houses of Wall Street. These latter are unquestionably the most vigorous enemies of the fraudulent promoter. The remarks of the fraudulent promotion are known to most investors—the old "get in at the bottom"—"buy now before the price goes up"—"every dollar invested in Ford Motor has paid $100,000 already—one good investment is worth a lifetime of work as a salesman." With the local banker

so willing to help a man constructively, there is little reason for being caught in a fraud.

In analyzing the general success of patents or patented articles, it should be kept in mind that the Patent Office issues about 50,000 patents a year; in the last five years about one-quarter of a million. Out of this number comparatively few new and profitable industries have grown to any size. Built on patents in that time, electric refrigeration may be said to be one of comparatively few. The ratio of successes to the total is very small, although some profit has been made in inventions in that period, even though these inventions may not have reached a wide market or become generally known.

Analytical Steps in the Development of Promotions.—In considering promotions it is convenient to develop the analysis on the basis of the following ten points:

1. Conception of the idea
2. Sales considerations
3. Manufacturing considerations
4. Development to concrete form
5. Models to prove operating features
6. Patents and trademarks
7. Final models, drawings, and designs
8. Actual sales
9. Actual production
10. Profits

This plan covers a more general investigation into promotions. Naturally, in the promotion of an oil speculation there would be very little to consider in the way of models and very little in the way of patents and trademarks. However, such items might be omitted in a certain analysis and might be covered in great detail in another. In order to cover the whole analysis in a general way, which is all that can be done in a book of this kind, we have amplified each of the points below:

1. **Conception of the Idea.**—Very few people are creative thinkers in the strict sense of the word. Very often things that look new to the public are old to those more familiar with a given art or practice. Therefore, the value of the idea itself must be carefully determined. Many ideas involving a rather low order of creative effort are "put over big," but such cases are rare and result only where sufficient business genius is applied to make up for the shortcomings of the creative effort. The really fine inventions are results of scientific research in the field of pure or applied science. These involve a high order of creative effort, but they seldom reach the public for investment because they are fostered by the large corporations as part of their plans of future development. Only the large successful companies can afford to spend the money for research. They look upon it as an investment in future business. Consider, for example, the invention of the vacuum tube. Its discovery represents a long period of research and intensive scientific effort. Such an idea as four-wheel brakes might in this country appear as brilliant, but as a matter of fact it had been used in Europe for many years.

2. **Sales Considerations.**—As in any other industrial situation, sales constitute the backbone of the business. Unless it can be proved that sales can be developed, there is little to be said in favor of a promotion. Sales in this sense are referred to as the sale of the commodity to be manufactured and not to the sales of stock in the promotion. This matter can be checked by making a sales survey upon which an estimated future sales quota can be based.

Mr. Fred Shibley's book, "A New Way to Net Profits," is devoted in a large measure to the importance of forecasting sales. He points out in the book how accurately the more successful corporations today can forecast their sales. Unless this step is covered, it is almost useless to proceed with the analysis of a promotion.

3. Manufacturing Considerations.—Many devices that come out in the form of promotions seem to work well in demonstrations but are actually poorly suited to large-scale production. Devices requiring delicate adjustment fall into this class. Well-known devices like carburetors and condensers are in this category. They are not foolproof and are not accident proof. Such devices bring a lot of complaints as a rule, are not easy to manufacture, and are not easy to keep in adjustment. Consequently such possibilities for profit are generally put in the hazardous class. A safe rule to follow is to favor a simple device, and the more complex the device becomes the lower it should be rated from a speculative standpoint.

4. Development to Concrete Form.—It is a long way from a vague idea to a demonstrable piece of machinery. It often represents years of intensive effort, and many thousands of dollars. There is no field of endeavor where money is consumed faster than in research and development. A very safe rule to follow here is never to invest, speculate, or assist in any proposition that is not developed to an operating basis. Even an engineer cannot always accurately estimate development costs; so to the layman there appears little chance of success. Edison is quoted as having said that it takes an average of five years to prepare a new idea for the market. In the case of the vacuum tube the Fleming Valve was its forerunner. It was only a scientific toy until recent years, since about 1920. The patent expired in 1924 and had been issued in 1907. There is no doubt that the cost of the combined effort required to bring the Fleming Valve to the present three-element vacuum tube is in excess of $1,000,000. But all that time it was owned by the far-sighted people or corporations who fostered its development, and not by "get-rich-quick" promoters.

5. Models to Prove Operating Features.—The inventor or promoter usually carries his promotions up to this point and then prepares to "sell" the investor. It should be remembered that

new products put on the market very often have to be modified in shape, size, color, price, and in other ways, much to the detriment of the corporate profits. The fact that you and the stock salesman like the product does not mean that the rest of the 120,000,000 people will. Models do not mean much unless it can be said of them that they have been sold in certain quantities and have been favorably received. In other words, public dislike of any device will absolutely condemn it regardless of its theoretical merits. One may recall the Congress shoe. This shoe had advantages over the laced shoe, but it did not sell. Public taste cannot be accurately predetermined, but it should be considered. This can only be done through a market survey using actual models for demonstration.

6. Patents and Trademarks.—A patent with a legal life of 17 years is an absolute monopoly granted by the government to properly qualified inventors. Such a statement sounds well but it is not at all exclusive. The government grants 50,000 a year and practically every one of them is very limited. Furthermore, patents can be proved valueless in court or they can be directly infringed. It is difficult to prevent "patent bootlegging." Furthermore, one must have clearly in mind the fact that very few patents are basic. As in the case of four-wheel brakes, the hydraulic brake appeared first and made a great impression publicly. Then many other devices, all patented, were brought out to do the same work in a slightly different way. The basic patents take a long time to develop and the lesser patents are always subjected to copy and imitation so as to render the market one of practical competition. Patents covering ideas to reduce manufacturing costs generally have the best chance of success. They can be sold, as a rule, without much promotional effort. Patents covering a new device are the most difficult to promote financially.

7. Final Models, Drawings, and Designs.—After an idea has been tried out in a laboratory way, it is in all probability necessary to have it redesigned to suit market conditions. Such pro-

cedure requires large amounts of money, time, and expert services. In these days people who buy are generally sophisticated. Changes in models, sizes, and shapes cost enormous sums. This point has been well illustrated several times in the automobile industry when new-type engines were put out in a new model, and then after a month of service, recalled. A new company cannot take such generous measures as a rule and would break under the financial strain of such a mistake.

8. **Actual Sales.**—This is the most important factor and does not require the services of a sales manager to fathom. Should the device be purchased at the price it is listed? Are its benefits real or imaginary? Would the public go out of their way to obtain it? The ultimate success of any business is primarily founded upon gross income from sales. If large and consistent sales cannot be anticipated for the device in question, the speculation is generally inherently weak. The best indication at this point is to possess some potentially attractive market. If the market is really in need of the article, generally speaking, the biggest problem is solved.

9. **Actual Production.**—Production today is mass production, which requires large amounts of capital. It implies machines and equipment running into hundreds of thousands of dollars merely to produce an article that may retail for a half a dollar. On the other hand, if it is unsuccessful, the investment in equipment is wasted, as the tools have practically no value except as junk. This again makes speculation of this kind a serious risk. The promoter either wins or loses. And very few win.

10. **Profits.**—This represents the last step—the one that is talked of the most and realized the least. Profits, if they are earned, must be declared as dividends before they are received by the investor. To this end business records and integrity of all the men involved in the promotion must be carefully checked. If the profits are realized, the investor is entitled to share them.

RECAPITULATION

1. Conception of the Idea	Valuable creations usually result from continued intelligent research. The Vacuum Tube is such a creation. It involves new principles.
2. Sales Considerations	A market survey should indicate that an unsatisfied demand exists. Sales resistance makes a speculation doubtful.
3. Manufacturing Considerations	Is the article simple to manufacture? It should lend itself to mass production. The simpler the article the better.
4. Development to Concrete Form	The main idea of the speculation should be developed to a definite workable plan. If a patented article it should be designed and ready to build.
5. Models to Prove Operating Features	Models should be real operating productions practically ready for the market.
6. Patents and Trademarks	It is best to get the opinion of an experienced lawyer relative to the validity of the patent.
7. Final Models, etc.	These should be produced as a result of the sales and the manufacturing survey indicated under items 2 and 3.
8. Actual Sales	Sales should be demonstrated even if test is made in a restricted area.
9. Actual Production	Simplest way is to let contracts for production at the start.
10. Profits	Assuming all other points are favorable, speculation should show a profit. Moral check should be made so that profits earned will accrue to the investors.

Figure 41. Steps to be Taken in the Analysis for Promotional Financing

A patent promotion is an excellent form of investment in which to lose money. When success picks out a patent to favor, it is an old story—many are called but few chosen. Inventions are useful primarily if they will cut down existing costs of production or sale; secondly, if they will do more for the same money, and last of all, if they cover new devices. A new device is not easy to promote successfully, yet practically all speculations in patent promotions are to manufacture and sell an alleged creation.

It must be impressed upon the reader that the field study to be made in a situation of this kind is just as important, and generally more so, than in the case of an investment issue. Particularly is this true of the sales considerations covering the commodity or service in question. Also, where it is necessary to have expert opinion as in the matter of legality of patents, it is important that experts be employed to do this work satisfactorily. One cannot guess that a certain article will sell, nor can one assume that a certain patent is good without running the risk of making a serious false step.

Recapitulation of Industrial Analysis as Applied to Pure Promotions.—Figure 41 presents a recapitulation of the points considered above, which will serve as a guide in making an analysis of a promotion. As in other matters of this kind, the experience of the analyst and the diligence with which he pursues his work are all-important. The recapitulation simply serves as a guide.

CHAPTER XV

RECAPITULATION CHARTS

Purpose of Charts.—It is necessary in industrial analysis to treat each case as a separate study, whether it be a matter of Preliminary, Complete, or Limited Analysis. However, there is a general method of attack in all this work. The basis is usually the complete statement analysis except in promotional ventures, where historic statements are not available. For purposes of a practical application of the principles that have been outlined in the preceding chapters, there is summarized in tabular form the following:

1. The materials to be assembled for different types of analyses.
2. The major factors to be considered in different types of analyses.
3. Tendencies toward industrial ailments revealed in comparative statement analysis.

Assembling Material.—Figure 42 presents a table of the different types of general analyses. Under each type is given in fair detail the list of materials and facts that should be assembled before the analysis is begun.

Assume that a Preliminary Analysis is to be made. It is necessary only to refer to the first column of the table to see what materials are generally assembled for such a study. First, there will be required general information on the industry. Then, there should follow details of the company's business, history, and a description of the particular company under consideration. Along with this, there should be sufficient material, in the form of balance sheets and profit and loss statements, to enable the user to make a reasonably accurate statement analysis.

By reference to this table, the analyst can see at a glance just

	PRELIMINARY	COMPLETE	LIMITED	SPECULATION	PROMOTION	FOLLOW-UP	SPECIAL STUDY
I. INDUSTRY	General review material.	Details on production and consumption; also trade competition, prices, etc.	Details on production and consumption. Also trade competition, prices, etc.	Details on production and consumption. Also trade competition, prices, etc.	Basic patent, product, or service with wide industrial application.	General periodic check.	Same material as in complete study with special emphasis on the particular industrial ailment.
II. BUSINESS	Details of company's gross business. General history.	Details of gross business. Details of history.	Details of gross business. Details of history.	Details of gross business. Chances for growth.	Market survey, sales possibilities, existing organization or new company.	Periodic check.	
III. BALANCE SHEETS	Five-year comparative record.	Five-year comparative record with details of all accounts.	Five-year comparative record with details of all accounts.	Five-year comparative record with details of all accounts.	Financial status of experimental stage; cost of development work. Paid-in capital.	Quarterly.	
IV. PROFIT AND LOSS	Five-year comparative record.	Five-year comparative record with details of all accounts.	Five-year comparative record with details of all accounts.	Five-year comparative record with details of all accounts.	Conservative estimates of profit and loss. Actual cost of experimental and development work.	Quarterly or monthly.	
V. VERTICAL CHECK (Comparison with other companies)	—	Similar statistics of competitive companies.	Similar statistics of competitive companies.	Similar statistics of competitive companies.	Legal and economic vertical check of patent and products with those of competitors.		
VI. PLANTS	—	Actual survey.	Plant layout.	Factors of plant economy.	Simple product. Minimum plant facilities required.	Note of plant changes.	
VII. SALES	—	Field check—customers.	Telephone check—customers and competitors.	Increased sales to increase earnings.	Conservative estimate of sales volume. Actual experimental results.		
VIII. MANAGEMENT	—	Organization study with interviews.	Organization chart with history of personnel.	Capacity of management.	Sponsorship and backing. Technical and financial resources.	Note of executive personnel changes.	
IX. PRODUCT	—	Field check.	Telephone check.	Telephone check.	Proved product experimentally and in practical application.		
X. DECISION CAN BE MADE ON ANALYSIS OF THIS MATERIAL AFTER IT IS CLASSIFIED.							

Figure 42. Table Showing the Various Kinds of Material to be Assembled for Each Type of Analysis

what materials are required. It must be remembered that as an analysis progresses certain facts are revealed which will open up avenues of further study. The table must not be followed too literally. It is simply provided as a practical means for facilitating the operations in the procedure of industrial analysis.

Major Factors.—In Figure 43 are set forth in considerable detail in tabular form the major facts that should be studied after the material has been assembled and classified. There is no rule of thumb or yardstick that can be used as a means of interpreting any particular set of facts for a hasty conclusive answer. Industrial analysis takes time and effort, but the items indicated in this chart provide a basis for determining the more important questions. Assume in this case that all the materials have been assembled for the analysis of a patent promotion. It is first necessary, as indicated in the table in Figure 43 under promotions, to determine whether the conception of the idea is substantial or otherwise. This having been done, it is necessary to determine whether the idea has been satisfactorily reduced to practice. The models should next be inspected from an operating standpoint. The individual patents should next be studied to determine their particular value and their legal status. Next, the product must be considered from a practical manufacturing, as well as a selling, standpoint. If, after adequate consideration, it is decided that the product must be remodeled, consideration must be given to the time and cost involved. Finally the problem of actual production, actual sales and profits must be considered. Having covered all these steps as indicated in the table, the resulting investigation will constitute, in effect, a complete patent promotion analysis. In a similar way, the table may be used for any other type of analysis that may be required. Furthermore, it is important to remember that the analyses of different industrial companies for different purposes require emphasis on certain features. For instance, an analysis of a coal company would certainly require greater study of the economic situa-

	PRELIMINARY	COMPLETE	LIMITED	SPECULATION	PROMOTION	FOLLOW-UP	SPECIAL STUDY
I. INDUSTRY	Is it soun l? Over-produced? Organized? Growing?	Is it sound? Over-produced? Organized? Growing?	Is it sound? Over-produced? Organize l? Growing?	Condition. Growth and future.	Is it sound? Over-produced? Organized and growing?	Is it sound? Over-produced? Organized? Growing?	Is it sound? Over-produced? Organized and growing?
II. BUSINESS	Trend. Growth (items) and prices.	Trend. Growth (items) and prices.	Trend. Growth (items) and prices.	Possibilities.	Possibilities.	Trend.	Trend. Growth (items) and prices.
III. BALANCE SHEETS	Preliminary analysis.	Complete analysis.	Complete analysis.	Complete analysis.	Estimated balance sheet.	Periodic analysis.	Complete analysis.
IV. PROFIT AND LOSS STATEMENT	Preliminary analysis.	Complete analysis.	Complete analysis.	Estimated increases.	Estimated profits.	Periodic analys's.	Complete analysis.
V. VERTICAL CHECK	—	Comparison with other companies.	Comparison with other companies.	Comparison with other companies.	Comparison with other companies.	—	Comparison with other companies.
VI. PLANTS	—	Layout. Condition. Valuation. Rehabilitation.	Layout. Condition. Valuation Rehabilitation.	General plant information.	Plans for production.	Plant changes.	Layout. Conditions. Valuation. Rehabilitation.
VII. SALES	—	Field check. Growth. Reputation Prices. Services.	Growth. Reputation. Prices. Services.	Reasons for expected growth.	Field check. Possibilities.	Growth.	Field check. Growth. Reputation. Prices. Services.
VIII. MANAGEMENT	—	Personal interviews.	Organization chart studies.	Addition of new men.	Complete check of all associates.	Personnel changes.	Complete organization study.
IX. PRODUCT	—	Field check.	Telephone check.	—	Value.	—	Field check.
X. THIS SHOULD PROVIDE SUFFICIENT MATERIAL FOR REACHING DECISION.							

Figure 43. Major Factors to be Considered in Different Types of Analyses

tion than would be required in a more stable industry, such as chain store operation. The analyst must be guided by his own judgment and experience in the use of this chart.

Tendencies Toward Industrial Ailments.—A third table is presented (Figure 44) to give in detail such tendencies toward industrial ailments as can be read from the comparative profit and loss statements and the comparative balance sheets. Here again, there are no specific yardsticks, since it is impossible to lay down any particular set of ratios that are generally applicable to analysis. The variations are so great that it might be interesting to demonstrate how they fluctuate. The authors have had occasion in the past to set up the financial statements of seventeen successful companies in all lines of business, including such companies as General Motors, U. S. Steel, General Electric, etc. The percentage of the different accounts to total assets was computed. In this assembled picture the cash varied from 1% to 18%; the accounts receivable varied from nothing in the case of F. W. Woolworth, to 28% in the Standard Oil of New Jersey. The current assets varied from 5% to 68%. The current liabilities varied from less than 1% to over 21%. We could continue to cite page after page of wide variations in ratios existing in different companies. Industrial or credit analysis cannot be put on the basis of standard ratios or credit barometrics.

Reference to the table in Figure 44 will refresh the analyst's memory concerning the important matters to be looked for in the analysis of a particular set of financial statements. The amount to which the inventories have been over-expanded must be determined by the analyst. By the application of the percentage trend method of analysis, outlined in previous chapters, there will be revealed the fact that the inventories are increasing without a corresponding increase in business. The analyst must determine from the terms of sale and the length of period of manufacture, and other factors, the quantity of inventory normally required for the particular business under study.

Balance Sheet	Profit and Loss
I. Weak cash position. Cash to notes payable (bank loans) 20%.	I. Insufficient profits.
II. Over-investment of receivables. Turnover should approximate terms of sale.	II. Inadequate depreciation and depletion.
III. Over-investment in inventories and supplies.	III. Declining sales.
IV. Over-investment in fixed assets. Unwise expansion.	IV. Excessive returns and allowances.
V. Inadequate working capital.	V. Excessive operating, selling, and administrative expense.
VI. Unbalanced capital structure.	VI. Excessive interest and service charges.
VII. Inadequate depreciation.	VII. Excessive withdrawals and dividends.
VIII. Source and disposition of funds.	VIII. Reconciliation of surplus.
IX. Excessive advances and investments in subsidiaries and affiliated companies.	IX. Diversity of production with break-down of sales.
X. Over-capitalization. Excessive intangible assets.	X. Excessive taxes.
XI. Excessive contingent liabilities.	XI. Extraordinary income and charges.
XII. "Hidden Values" excessive reserves. Under-valued assets.	

Figure 44. Tendencies Toward Industrial Ailments Revealed in Comparative Statement Analysis

In connection with the three tables and charts presented in this chapter (Figures 42, 43, and 44), the reader should remember that a particular case may require a highly detailed analysis, not indicated in the charts.

The use of the charts is offered as a tool to eliminate burdensome detail, but not as a substitute for constructive and independent thought. The charts will assist the careful analyst, but they may quite readily lead the careless student to incorrect conclusions not based upon sound judgment.

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